

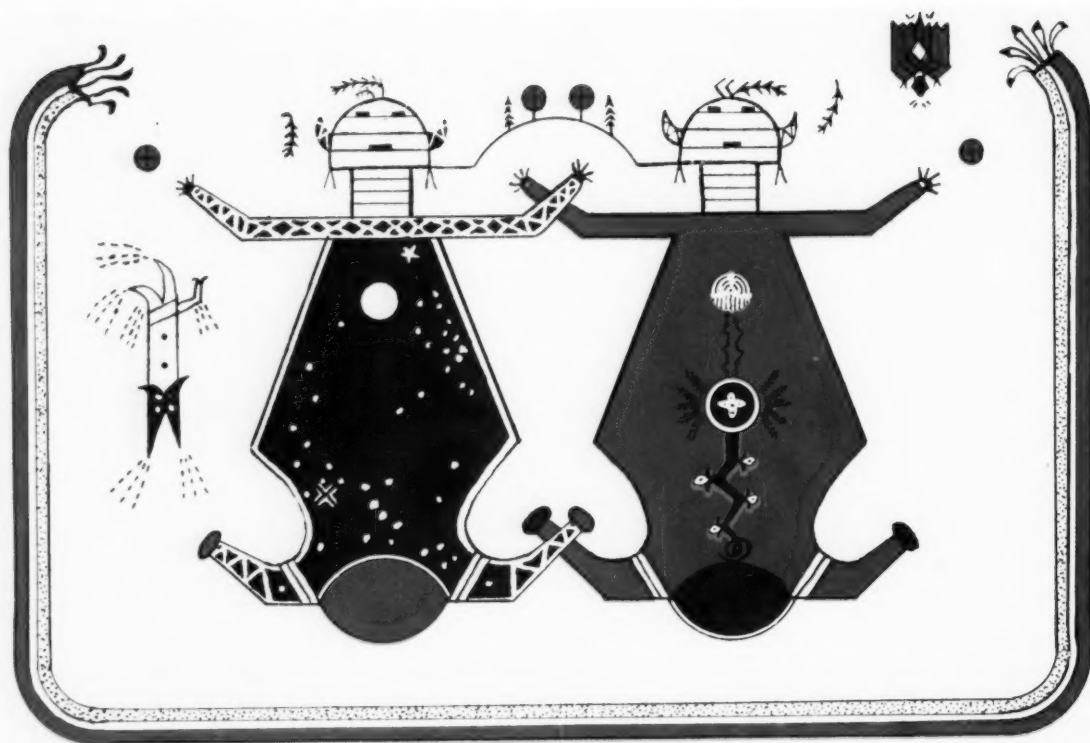
Desert

... magazine of the

**OUTDOOR
SOUTHWEST**



35 Cents
FEBRUARY 1960



Father Sky and Mother Earth

THE INDIAN KNOWS that the Great Spirit is not bred into man alone, but that the whole of the universe shares in an immortal perfection.

The first creation of the Great Spirit was Father Sky and Mother Earth (see above) from whom all life sprang. The crossing of their hands and feet signifies the union of heaven and earth, bound eternally together by the Rainbow Guardian. The stars and moon and the constellations are shown on the body of Father Sky, and the criss-crossing on his arms and legs is the Milky Way. From the bosom of Mother Earth radiates the life-giving energy of the sun, bringing fertility to the womb of Mother Earth, from whence spring the seeds of all living things.

The four circles, in divisions of four, represent the four cardinal points of the compass, the four elements, the four ages of man, and the four seasons of the year. The small figure on the left is an astral medicine pouch deriving the power to heal from the constellations. The bat, sacred messenger of the spirits of the night, guards the sandpainting at the opening of its border.—*David Villasenor*

David Villasenor:

ARTIST WITH SAND

By PEGGY POWELL

TO ARTIST David V. Villasenor of Pasadena, Calif., the sandpaintings he first saw as a youth of 16 on the Navajo Reservation were a determining influence in his continuing search for artistic expression. Out of this has been created a new media that brings the perishable sandpaintings, once relegated to the remote areas of Navajoland, into the living rooms of modern Americans as permanent works of art.

Since a sandpainting's very permanency is in opposition to Navajo tradition (sandpaintings started after sunup are destroyed before sunset, and those begun after sunset are destroyed before dawn), Villasenor deliberately makes one "mistake" in each of his works. Also, he leaves each ceremonial sandpainting reproduction incomplete (as Medicine Men do in public demonstrations). In this way the artist feels that his "tapestries in sand" are not sacrilegious—and at the same time he is helping to perpetuate a form of art that could die out with the older Navajo generation. Medicine Men who use sandpaintings as part of their sacred curing rituals are usually the first to encourage the preservation of these ancient forms when the artist's motive is sincere.

Villasenor's technique is very simple. For small demonstration paintings he uses a piece of sandpaper for a "canvas." First he makes a pencil outline of the figure or symbol to be "painted." Working on a small section of this design, he applies a thin coating of clear plastic cement which is quickly doused with a generous handful of colored sand. After allowing this to set for a few minutes, he pours the excess sand back into its container and blows away the loose grains on the canvas. The lines on the design are cleaned and made even with a small scraper. Additional coatings (Villasenor sometimes applies as many as 21) give the painting contour and brighter color. The artist often grinds his own sand from rocks, and no artificial coloring is added.

Villasenor's sandpaintings are not limited to Indian designs. He has done many landscapes and portraits, but his most outstanding work to date is a group of 21 sacred Navajo sandpaintings commissioned by the American Museum of Natural History. It took nine months to complete this project.

The artist, part Spanish and part Otomi Indian, was born 43 years ago in Jalisco, Mexico. He received his introduction to art and Navajo sandpaintings at 16 when he hired on as cook for a party of Tucson artists touring the Arizona Indian country.—

END



You are cordially invited to attend a special showing of David Villasenor's work at the Desert Magazine Art Gallery in Palm Desert, Calif., February 2 to 22. Other one-man shows scheduled at the admission-free Gallery this season: Fremont Ellis, Feb. 23-March 14; Charles Reynolds, March 15-April 4; and R. Brownell McGrew, April 5-May 2.

LETTERS

... FROM OUR READERS ...

Lost Lee Misinformation . . .

Desert:

Referring to the article by Walter Ford, "Cottonwood Springs," in the December issue:

The author writes: "During the '90s, a prospector . . . discovered a fabulous ledge of gold-bearing quartz in the Bullion Mountains . . ." Farther down, he writes: "Adding credence to the story is the fact that ex-Governor Waterman of California . . . offered a huge cash reward for a part interest in the mine . . ."

This statement is entirely incorrect. Not only is it erroneous, it is ridiculous. There never was a "Lost Lee Mine." The Lee heirs or people claiming to be his heirs brought suit against Gov. Waterman in the early '80s in an attempt to get the Waterman Mine. First they had to prove that Lee was dead (he had not been seen or heard from since about the middle '70s). They produced a skeleton—claiming it was Lee's. In court it was proven that the skeleton was that of an Indian woman. Gov. Waterman won the case.

During the past 70 years I have heard many variations of the Lost Lee Mine fable, and I have tried to correct them.

R. W. WATERMAN
Daggett, Calif.

Christmas at the Mine . . .

Desert:

Your stories of Christmas on the desert in the December issue brought back memories of the Christmas of 1906. In the fall of that year, A. R. Burch and I took a contract to drive a 200-foot tunnel at the Copper Bottom property in Cunningham Pass, 12 miles southwest of Quartzsite, Arizona.

At the time there were 10 saloons in Quartzsite, and it was customary at Christmas time for these places to serve Tom and Jerry to the miners. My partner and I knew that if we allowed our crew to go to town we wouldn't be able to get back on our work schedule until after New Years. And chances are we'd never see some of our boys again. So we decided to have a Christmas feed at the mine camp.

From Pete Smith, who ran a hotel near the schoolhouse, I purchased an 18 pound turkey and two quarts of the Juice of Forbidden Fruit. When Pete handed over the turkey, he said, "Here is a bird all dressed and ready for the pot." I took him at his word.

Back at camp we found out that no one knew the first thing about cooking a turkey—so the job fell on my shoulders. I stuffed

the bird with canned oysters and plopped him into the oven. Then I mashed potatoes, heated some canned peas and corn, and made a salad. I also served brown gravy, candied sweet potatoes, cranberries and pickles. My partner made a great pan of biscuits.

The turkey was browned nicely and looked fit for a king. I had taken a lot of pains and did a lot of basting. Of course I was proud of the job, this being my first turkey.

Burch set the table and the men gathered around the beautiful bird. I suggested that he carve.

Luckily, the men were busy passing the bottle for they didn't catch the sorrowful look Burch gave me when he cut into the bird.

"I must go out to the kitchen to carve," he said hurriedly. "There's not enough room on the table." With this he gathered up the turkey and rushed out of the room. I followed on his heels.

"You didn't remove the turkey's craw!" he said in a low voice. I explained that Pete had told me the bird was "ready for the pot," and anyhow, I never knew anyone to start at the neck when carving a turkey, they usually start with a leg.

Burch cleaned out the craw and brought the bird back to the table. We ate for an hour or more (Burch and I ate the legs) and the boys were loud in their praises for the finest Christmas dinner many of them had had in years.

As it was, we didn't get back to work for

three days—but that's better than it would have been had we celebrated Christmas in Quartzsite.

BILL KEISER
Quartzsite, Ariz.

Spanish for "Merry" . . .

Desert:

I note on page 6 of your December '59 issue the words "Felice Navidad" as the title of Phyllis Heald's Christmas story. This is supposed to be Spanish for "Merry Christmas," but in fact it is not Spanish at all. "Felice" is Italian. The Spanish form is "Feliz."

This is a pretty bad break for a magazine of the class of *Desert*, and I am surprised that the editor let it go through.

S. G. MORLEY
Dept. of Spanish and Portuguese
University of California
Berkeley

(My Spanish dictionary — compiled by Velazquez — lists "Felice" as meaning "happy, fortunate, lucky, prosperous, felicitous"—although "Feliz" is preferred. —Ed.)

"Canyoneer," Continued . . .

Desert:

The debate between "Doc" Marston, Randall Henderson, et al., over "canyoneer" versus "river rat" strikes me as rather pointless, since both men seem to have overlooked the different shades of meaning in the two terms.

To me a "river rat" is one who finds his recreation in boating on rivers whether fast or slow, placid or turbulent. A "canyoneer," on the other hand, is one who loves the canyons, whether his mode of travel be by boat, pack mule or shanks' mare. He need

GET INTO THE WIDE OPEN

with . . .



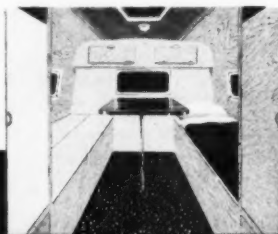
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not even be a competent boatman to be a canyoneer.

As editor of *American White Water* I have endeavored to avoid using the terms interchangeably; even though the two avocations can (and frequently do) overlap in the same person, they may also be distinct and separate. Take my own case as an example. I am a river rat 12 months a year; during the brief weeks I am able to spend in the West I am also a canyoneer. And in both capacities I am saddened by the apparent success of the campaign to destroy our beautiful rivers and canyons with dams of questionable justification. Let's quit quibbling over terms and get together to try to save the sites where both fraternities find their enjoyment.

MARTIN VANDERVEEN
Chicago

Nevada's Longest Line . . .

Desert:

Peggy Trego's December travel column, "Montgomery Pass," contains the following statement:

"Happily, the highway follows the narrow-gauge remnant of what was once Nevada's longest railroad—the *Carson and Colorado*—the line of the Slim Princess."

The *Carson and Colorado* between Mound House, Nevada, and Keeler, California, was 293 miles in length, of which 107 miles were in California, leaving 186 in Nevada. This from timetable No. 15, effective Monday, October 15, 1883.

The records show that the *Union Pacific* has 288 miles of track across Nevada, the *Western Pacific* 428 miles, and the *Southern Pacific* 443 miles. Of course, the *Union* and *Western Pacific* lines are "Johnnie-Come-Latelies," having been constructed long after *Carson and Colorado* was built,



HAGLE CHILDREN EXAMINE SNAKE SKIN

but the *Central Pacific*, now a part of the *Southern Pacific* system, was in existence considerably before the *Carson and Colorado* was constructed.

From the above you can see why I question that the *Carson and Colorado* was once Nevada's longest railroad.

ARTHUR C. DAVIS
Reseda, California

(Of all the railroads planned, financed and built within Nevada—with that state as "home port"—the C&C was the longest. The transcontinental lines were never regarded as "Nevada's." They still aren't. Ask any Nevadan. Mrs. Trego considers 294 track miles (a figure that does not include the Filben to Candelaria spur) as the rightful claim of the C&C's total length. "Some highly interesting arguments," she writes, "can be set forth as to track mileage of various roads entirely within the state. Sen. William Clark's Las Vegas-Tonopah line had approximately 207 miles of rail." Borax Smith's Tonopah & Tidewater RR, running up from California's Mojave Desert into southern Nevada, might possibly be considered by some as being "Nevada's longest line."—Ed.)

Lucy Meets a Rattler . . .

Desert:

After reading about "Mr. Rattlesnake" (Laurence Klauber) in *Desert Magazine* (July '59) I met one of his "pets" face to face. I was afraid for a second. I think he was afraid, too, because he didn't even move, shake his rattles, or strike at me. I ran to the house to get my mother. She came out with the hoe and cut off his head. My mother was sorry that he lost his head, because she thinks he would have liked to have kept it.

My brother skinned the rattlesnake and tanned the skin. Do you know how to tan a snake skin? An old-time rancher told us how. It is very easy: first you cut the skin down the middle of the belly. After scraping the flesh off the under-side, you stretch and tack the skin to a board, then rub neat's-foot oil into it, until it is soft.

It will make my brother a beautiful belt or wallet.

LUCY E. HAGLE (age 9)
Ramona, Calif.

An Out-of-Place Name . . .

Desert:

In John Hilton's excellent series on his recent Baja California explorations (*Desert Magazine*, Oct., Nov. and Dec. '59 and Jan. '60) I note the mention of a "Smith's Island" in Bahía de Los Angeles. How in the world did so incongruous a name as "Smith's Island" come to be in a gulf full of islands bearing melodious names such as "Angel de la Guarda," "Encantada," "Tiburón," "San Lorenzo," "San Esteban," "Espíritu Santo," et. al.?

J. B. MASON
Los Angeles

(In the winter of 1850-51, Lieut. George H. Derby of the Topographical Engineers made a reconnaissance of the Gulf of California and the Colorado River's mouth. Derby's ship put into Bahía de los Angeles for fresh water and there "we discovered a large island lying close to the [Baja] California shore, off the southern extremity of Angeles Island [Isla Angel de la Guarda] . . . which, not being put down upon any chart, I named Smith's Island, in compliment to the general commanding, by whose order the expedition was undertaken." The honored officer was Major General P. F. Smith, then commander of the Pacific Division.—Ed.)

VISIT BEAUTIFUL MONUMENT VALLEY

Stay at the Wetherill Inn, Kayenta, Arizona, a new modern 14 unit AAA motel, located in the heart of the Navajo reservation. Jeep trips into Monument Valley may be arranged. Side trips by automobile to Betatakin, one of the most picturesque cliff dwellings in the U.S., and horseback trips may be arranged into famed Keet-Seel cliff dwelling, the largest cliff dwelling in Northern Arizona. Trips by auto may also be made to Mexican Hat and the famed Goose Necks.

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Publisher's Notes . . .

A special feature this month (page 20) takes the readers outside our own Southwest to the Iranian desert half a world away. William E. Warne, a former Point Four director in Iran, has authored an interesting article on the primitive but effective water-gathering ghanats of ancient—and modern—Persia. Can ghanats be adapted to some of the arid Southwestern valleys? The modern Western world is beginning to develop the horizontal well drilling technique.

Some future topics that Warne proposes for the pages of *Desert* are ice-making in an arid land, and camels, the desert's beast of burden.

Hoping that we have a good winter rain here in the desert country, bringing a carpet of wildflowers for the dunes and canyons, we have scheduled a gem and mineral trip into the heart of the Mojave Desert, always a wonderful target for

those who have spring fever. Pages 39 to 41 tell of five mapped field trips for rock-hounders.

Of further interest to the bulletin editors of the rock and gem societies, *Desert Magazine* is planning to conduct the annual bulletin editor's seminar in late March or early April. Again we are hoping for a bountiful flower display to attract the editors to our area.

Starting February 23 and lasting until March 14, the Desert Magazine Art Gallery features the one-man show of Fremont Ellis, leading artist of Santa Fe. Ellis will provide next month's four-color cover. The Monument Valley scene is typical of his bold colors and clean design.

Once again *Desert Magazine* extends a cordial invitation to our readers and friends to visit the Desert Magazine's Fine Arts Gallery, the leading all-desert gallery of the nation.

CHUCK SHELTON
Publisher

Desert — magazine of the OUTDOOR SOUTHWEST

Volume 23

FEBRUARY, 1960

Number 2

COVER	Colorado River Aqueduct at its crossing by U.S. Highway 60 near Indio, California, in the heart of the Colorado Desert. In the distance is the snow-clad peak of Mt. San Geronio, 11,485 feet. Photo is by Carlos Elmer
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PERSONALITY 14	Mojave Barbecue King Evelyn R. Young
RECREATION 16	Back-Country Jeep Tours Charles E. Shelton
WATER 20	Ingenious Persian Wells William E. Warne
HOMEMAKING 22	Home Entrances Louise Bell
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GEMS-MINERALS 39	Barstow-Area Field Trips Charles Silvermail

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TRANSPORTATION ON THE DESERT . . .


. . . BEFORE THE AUTOMOTIVE AGE

By
Mary
Hill



GETTING ABOUT the desert a hundred years ago was not so fast, so comfortable, nor so neat as is possible today. There was no equivalent of the jet that can sweep from Mojave to Santa Fe in a matter of minutes, leaving behind an air-quake a hundred miles wide, nor of the helicopter that can hover gently above the desert sand.

But even now, most of us don't travel by jet or helicopter. We travel by train, which had its predecessor in the wagon train; or we travel by bus, descendant of the overland stage; or by automobile, which might be likened to the horse of earlier times. Those of us who are more venturesome may take jeeps into the wilder portions of the desert; a century ago we would have chosen a mule or one of its relatives. But for steep rugged country, there is still no substitute for Shanks' Mare.

Continued 

Transportation on the Desert . . .

(continued from preceding page)

"SHANKS' MARE"

One's own feet were often the best—or only—means of transportation. Here is a group of Mojave men walking through the desert.

Prodigious walkers, the Mojave traveled 30 miles easily, and have been known to walk 90 miles in a single day and night. They met their match in endurance, if not in speed, in the men of the Sixth Regiment (now the Sixth Army). Sent to the Mexican wars, the

Sixth was called to duty—on foot—into Minnesota, Kansas, Nebraska, Arkansas, Iowa and Missouri; they saw action—on foot—against the Cheyenne and Sioux. They were

sent—on foot—to Utah during the "Mormon Trouble," but on arriving in Utah were hurried—on foot—to Oregon, and finally to a

much-needed rest in California. Their siesta was brief, however. They

arrived in San Francisco Bay on November 15, 1858; by March 25

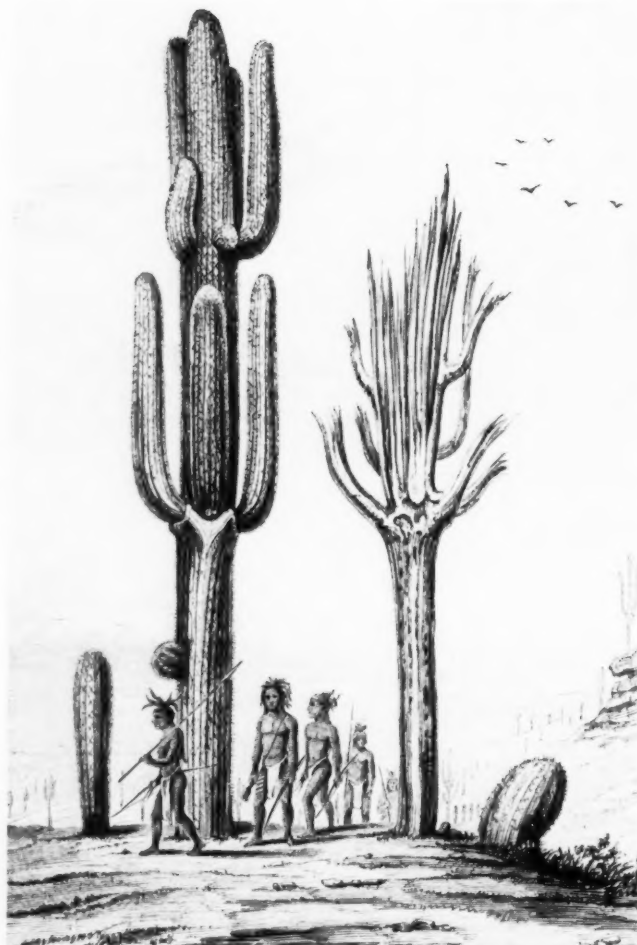
they had walked to Yuma (or Camp Dirty, as the soldiers called it).

Their intention was to "wipe out the Mojave," who had allegedly massacred a wagon train—

the first to cross on the partly finished Beale wagon route to California. Whatever the truth about the massacre, the war did not come off.

The problems were settled at the conference table.

Drawn by H. B. Mollhausen in 1853.



During the California Gold Rush, the Eastern press made sport of certain species of Western immigrant. This cartoon, "A Gold Hunter on his way to California, via St. Louis,"

bears the caption: "I am sorry I did not follow the advice of Granny to go 'round the Horn." Starting with the Mountain Men, the West has known many "Great Walkers," not least of whom was the renowned naturalist John Muir.

... Transportation on the Desert

(continued from preceding page)

HORSEFLESH

In a land where waterholes were separated by great distances, a man's life quite often depended on his horse. In many instances, stealing or killing a horse was tantamount to murdering its owner—and that is why horsethieves were hung. This painting by Frederic Remington, a renowned artist of the early West, is titled, "The Well in the Desert."



THE WAGON TRAIN



For those who traveled in groups, as most of the immigrants did for the sake of safety, the "prairie schooner," usually drawn by oxen or mules, was the mainstay. In 1849, Lieutenant Couts reported seeing 5000 of these wagon trains on the southern route to California. Here is a train being protected by the Army. Most of the soldiers walked, including officers up to the grade of Captain. Remington's painting "Protecting a Wagon Train," was published in 1897.

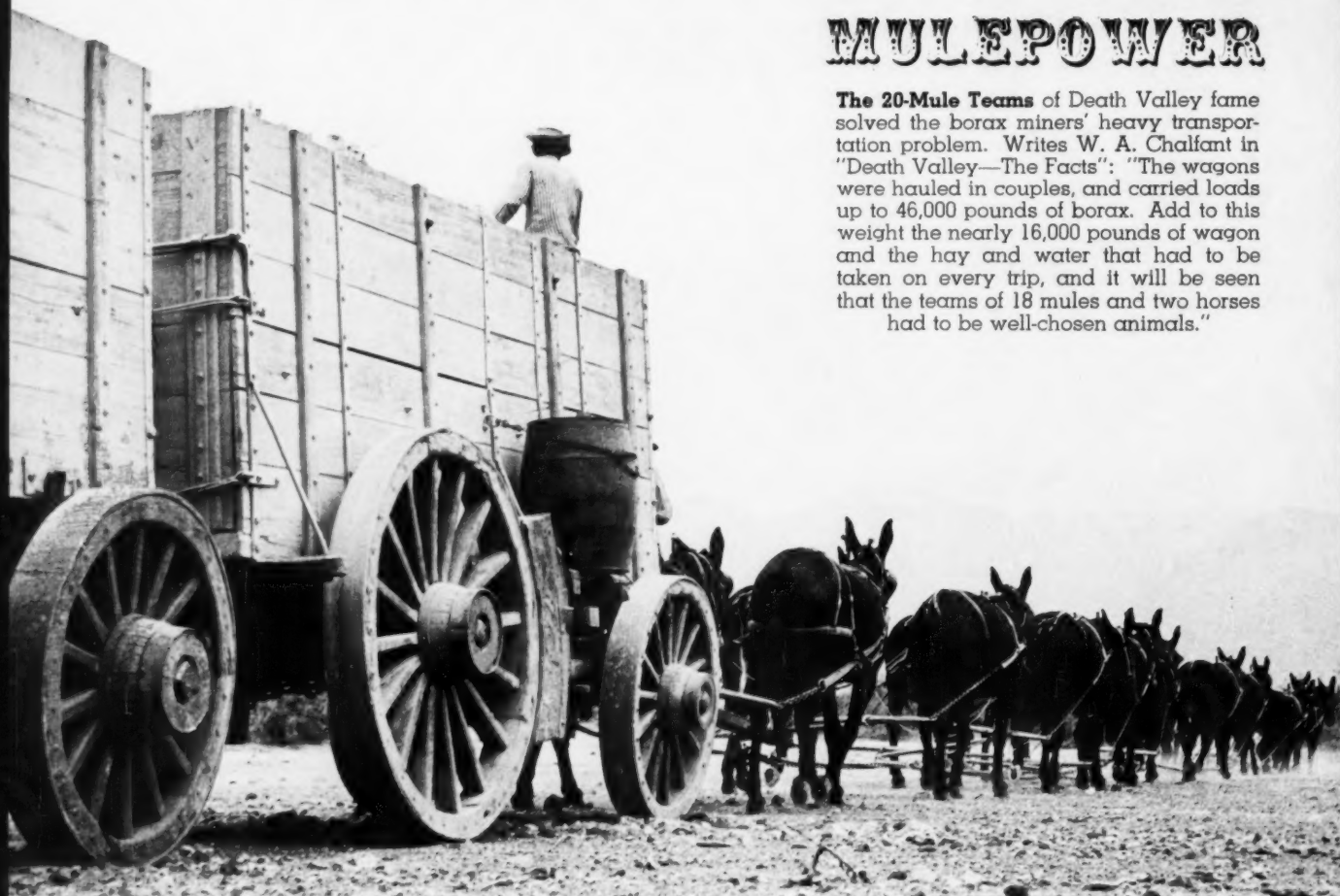
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Transportation on the Desert . . .

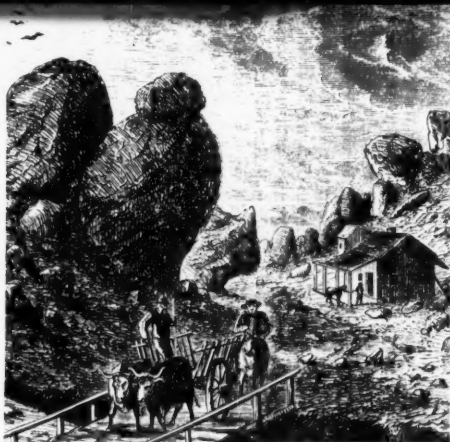
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MULEPOWER

The 20-Mule Teams of Death Valley fame solved the borax miners' heavy transportation problem. Writes W. A. Chalfant in "Death Valley—The Facts": "The wagons were hauled in couples, and carried loads up to 46,000 pounds of borax. Add to this weight the nearly 16,000 pounds of wagon and the hay and water that had to be taken on every trip, and it will be seen that the teams of 18 mules and two horses had to be well-chosen animals."



Man and mule were a familiar sight on the deserts of the Southwest. Here is J. Ross Browne, a self-portrait. A true world-adventurer, Browne left his native Ireland as a very young man, worked his way in far places as best he could—deckhand, laborer, and the like. His pen and pencil were his most dependable means of livelihood; magazines here and in Europe carried his lively adventures. This un-flattering picture (contemporaries said Browne was neat and dapper) was drawn in the Arizona desert while he was on a trip through the Southwestern mining country in the early 1860s. "Hardy adventurer" was his caption for it.

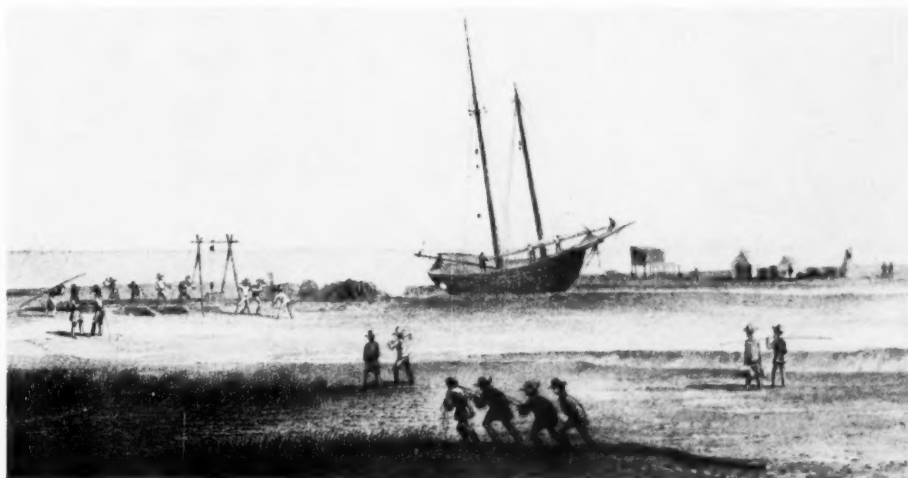


OXEN

Oxen were used to draw small wagons as well as large ones. Here is the town of Mono, California, as J. Ross Browne saw it; the city no longer exists. The drawing is from his "Travels in Arizona," first published in 1864 in "Harper's Magazine."

ACROSS WATER

Though little of the desert is navigable, where there is water there likely are boats. Sailors have gone up the Colorado since the days of Coronado; in the early days, their sailboats were sometimes powered by strong Indian swimmers whose ancestors for many centuries had been navigating the rivers by raft and boat. Here is the "Monterey" in 1858, after delivering the various parts of the Colorado Exploring Expedition's boat "Explorer" and members of her crew. The schooner is "parked" by a "hotel" run by one Captain Robinson, a steamboat pilot.



... Transportation on the Desert

(continued from preceding page)

DROMEDARY EXPRESS



Camels—a method of locomotion that did not work—at least, not well. Camels were introduced to the American desert in 1857 for the purpose of aiding the Army in carrying supplies from outpost to outpost.



Transportation on the Desert . .

(continued from preceding page)

OVERLAND STAGE

The overland stage ride through the southern desert was certainly one of the world's roughest and dustiest rides.

Besides an attack upon one's digestive system, the stage ride presented the possibility of attack by Indians or bandits. The man who rode up front with the driver, often called the "shotgun," was supposed to be the protective shield between the passengers (and cargo) and the dangers of the trail. Published in 1880.



At some points the stage could count on the protection of the men at the stage station—if it could manage to drive fast enough to gain the asylum. In this memorable painting by Remington, "An Overland Station: Indians Coming in with the Stage," it looks as if the stage will make it.—End

Transient Waterways

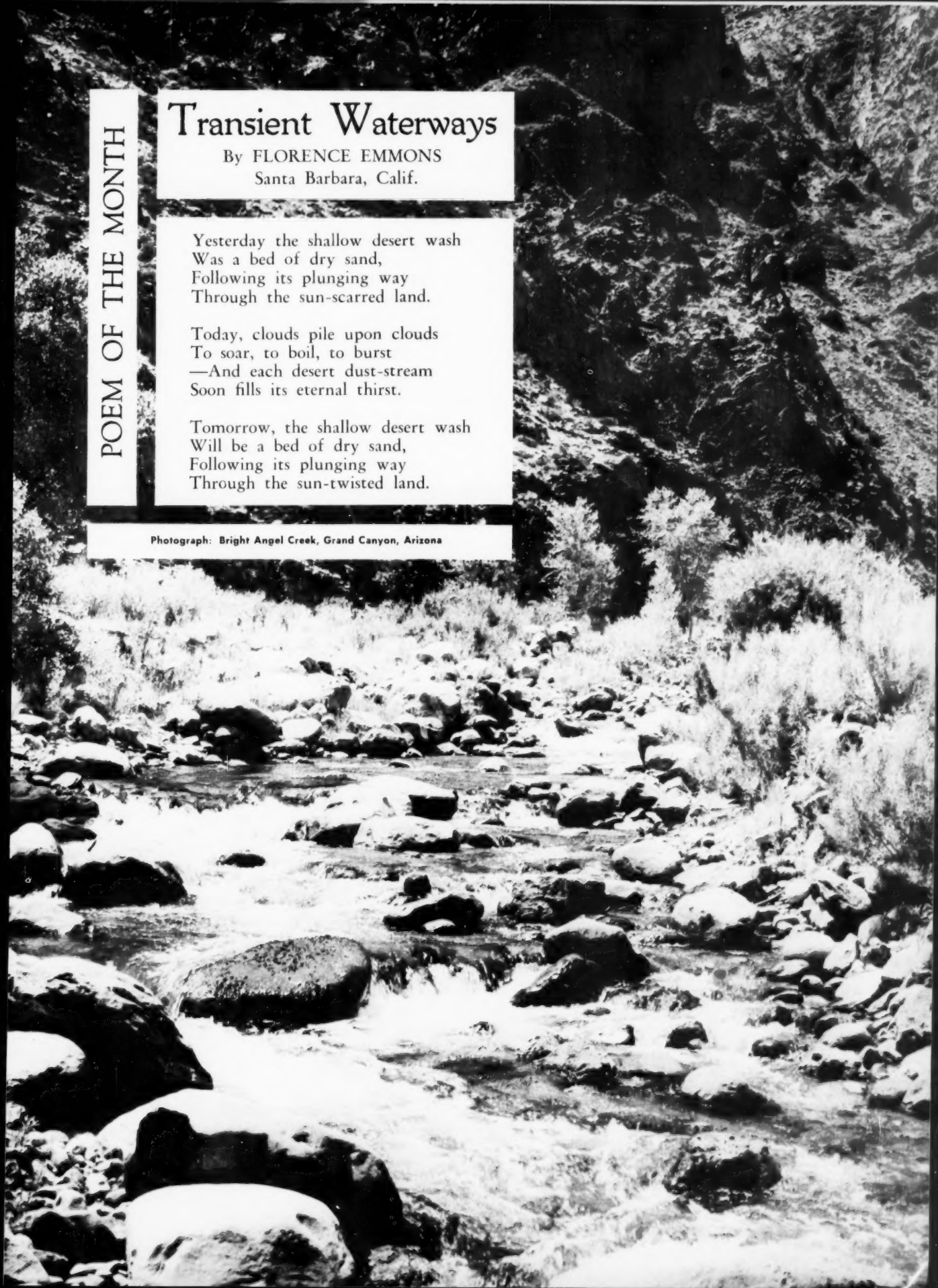
By FLORENCE EMMONS
Santa Barbara, Calif.

Yesterday the shallow desert wash
Was a bed of dry sand,
Following its plunging way
Through the sun-scarred land.

Today, clouds pile upon clouds
To soar, to boil, to burst
—And each desert dust-stream
Soon fills its eternal thirst.

Tomorrow, the shallow desert wash
Will be a bed of dry sand,
Following its plunging way
Through the sun-twisted land.

Photograph: Bright Angel Creek, Grand Canyon, Arizona





MOJAVE BARBECUE KING

Rawley Duntley has been doing good work—and good deeds—at the barbecue pit for 50 years

By EVELYN R. YOUNG

CATTLEMAN RAWLEY DUNTLEY is "King of the Barbecue" in the Mojave Desert of California. For over 50 years he has been digging pits and burying sacks of choice beef amid hot ashes and rocks. Duntley has spent each night before these many "Barbecue Days" working in his kitchen to prepare *frijoles*, *salsa*, salad and rolls—the never-varying beef barbecue supplements. During this half-century of one barbecue after another, Rawley has fed thousands of desert citizens—and he has never received one dime for his services or the use of his costly equipment. It's his sincere pleasure to contribute his widely-recognized talents to the community.

A desert dweller since the days of the giant Mojave Desert jackrabbit drives (special trains would bring hunters from Los Angeles) which always ended in a big community barbecue, Duntley decided to carry on the tradition of the California-Spanish feast. He learned these culinary accomplishments from Spanish-speaking neighbors when he was a lad on his father's ranch, and he has continued this custom to the delight and prosperity of his fellow desert citizens not only to help raise money for benefits close to his heart, but because "we always had such fun at a barbecue when I was a boy."

The Duntley family migrated to Antelope Valley from Iowa when Rawley was a young lad. On their "inspection tour" of California, the Duntley farm wagon passed through Bakersfield. Young Rawley was dismayed to see a dead dog lying in the middle of Bakersfield's main street, and he remembers his father's observation:

"Any town that's too lazy to move a dead dog out of the road will never amount to anything." The Duntleys drove over the Tehachapi Mountains to Antelope Valley.

Any worthy cause can enlist Duntley's help in staging a real old-time barbecue. Through his cooperation, Antelope Valley churches have garnered considerable funds, Little Leagues have raised money for uniforms and equipment, mining councils have been fed while important affairs were settled, P.T.A. and Women's Clubs have sold tickets to Rawley Duntley barbecues to increase their charity funds. The list of benefactors is endless.

During the 50 years of their married life, the late Mrs. Duntley took over the kitchen chores for the barbecues, but since her death, Rawley has relied on his "volunteer assistants." These friends come from all over the valley to help—and from all walks of life. From the Master Barbecue they have learned how to contribute to their communities through the medium of the public feast. Duntley hopes that these younger desert dwellers, many of them newcomers to the wide expanse of the Mojave, will carry on the early Californian tradition of good food and plenty of it when he is no longer able to do so.

One of the biggest and most successful of Duntley's community dinners was the one given recently at Kern. He fed over 5000 desert citizens who had rallied there to discuss water problems! From Newhall to Death Valley, Rawley Duntley's effort to aid his neighbors through his barbecues has become a living legend. During the Depres-

sion Thirties, when the area's mines were shut down, Duntley's barbecues were often the only guarantee some of the miners had of receiving a decent meal. The meat was often donated by the chief cook from his dwindling herd.

A story told around the Mojave about Duntley during the Depression Days pretty well sums up this man's good work. While walking down the highway he passed a darkened restaurant, a candle gleaming inside. On investigating he found the lady owner at the counter, crying. The electricity had been turned off; she had no customers and no money. The cafe had been in business for years—but the mines were closed.

"We'll give a barbecue," said Duntley, and then he proceeded to dig a fire pit in the restaurant's yard.

While his wife prepared the frijoles, Rawley rode all over the Mojave on his horse (desert tires being too well patched in the Thirties) to spread the word. Like Paul Revere, he rode all night from one small town to another, inviting families to the barbecue. The beef came from his own little cluster of cattle.

The next day the folks gathered at the cafe. The soft drinks they bought alone put the restaurant back in business.

"Shucks," said Duntley when I brought this story back to him, "if a feller can't be neighborly, what's the use of livin'?"

Here are Duntley's pit barbecue "secrets":

The meat: one pound of beef per guest. Cheaper cuts can be used: neck, ribs, brisket—but all must be carefully boned, and all gristle removed.

Meat seasoning: plenty of salt, black pepper and lots of garlic salt.

Wrapping: the meat is selected and wrapped at the packing house these days, but in the past Rawley did all of this himself. Each package contains 24 pounds of meat. Place in two clean white cotton sacks, then into a brand new (must be unused) burlap sack. Tie sack and dip in water. Sack must be well-moistened before placed in pit.

The pit: select a level spot where earth is hard. Dig a pit four feet deep, four feet wide and six feet long for every 400 pounds of beef. Use field stones to line bottom and sides of pit.

Wood: any hard wood will do, but wood must not contain pitch (Duntley's favorite was dried yucca stalks in the old days). When the bonfire has reached the right intensity, scatter the embers and hot ashes in pit, lay on meat sacks then quickly cover with dirt (don't allow sacks to ignite). Allow meat to cook 24 hours.

Frijoles: allow 1/10 pound pink beans for every guest. Wash carefully and let soak overnight. Cook with strips of bacon, ground beef and onions. Cooking time varies with elevation: between two and four hours. Beans are done when tender.

Salsa: let your taste determine proportions of ingredients: chopped green and red chile, chopped onions, solid pack tomatoes, oil, vinegar. Serve cold in separate container—but sauce is "hot."—END

Increasing numbers of vacationing Americans are spending their leisure days "discovering" the Southwest's last frontier, thanks to the growing popularity of—

Mechanical "Mules"

By CHARLES E. SHELTON



IF YOU CAN take campfire smoke and dust and bumpy roads, if you can spare 10 days and \$300, then you can still be one of this nation's "explorers." But don't wait long, for the age of adventuring is about finished on this continent. Paved roads, pushing their oiled feelers into the back-country, are dissolving the last strongholds of the fabled Western Frontier.

It's an axiom of modern America: the firmer the surfacing on the road, the softer the living along the roadside. Let any oldtimer tell you about the Los Angeles-Yuma road in 1920: it wasn't a road, it was an experience—all three days of it. Now, in 1960, it's nothing but a family outing for the day. Or ask dad to tell you what he went through on the sand trail from Santa Fe down to El Paso three decades ago. That soul-tester of a by-gone day is merely a speed test today.

Yet, there are a few spots in the Southwest even now where you can get all the red dust you can choke down,

where there's no gas station within a day's journey, and the nearest motel is a long dream away.

One of the few remaining escape-corners in America is in San Juan County, Utah. Though San Juan has many paved roads, a large hunk of the country—an area as large as the state of Massachusetts — doesn't have anything smoother than rough trails fit only for four-wheel drive vehicles and horses. Ten miles an hour is good average travel in this poorly mapped million-acre malpais.


Along with its rugged roads and escapism, the southeastern corner of Utah offers some of the most fantastic and colorful scenery in America. Recently I went into the San Juan back-country on a trip conducted by Kent Frost of Monticello, Utah. Though hundreds of vehicles of various types had explored the same area over the past dozen years—most of them prospecting for uranium or oil—our group was the first commercial "party trip" to bounce over the rutted hills and canyons lying between



Tom Shelton gazes into the water of a huge "pot-hole" near The Chute as other members of the party edge down-canyon to view newly-discovered Pioneer Natural Bridge—named in honor of Arthur Lyman.



Fern Frost eases her jeep down a steep sandstone slope near Elephant Hill. The next jeep awaits its turn.

 **Jeep convoy** drives into the entrance of a large cave used as a shelter by early-day cowboys near the Needles Country

the San Juan River and the Needles Country. (In the November, 1956, *Desert Magazine*, W. G. Carroll described a jeep trip he and three others made to the Needles. After I had seen this country, I felt that Carroll had been a very conservative writer. He could have used the adjectives "fantastic" and "colorful" and "beautiful" about every third sentence!)


For me, our expedition had its thrills as our convoy of four jeeps climbed up and down the slick rock hills, and we had more bumps than I care to remember, but all in all it was a pleasant tour in a land that will one day be as famous and as heavily traveled as Monument Valley, or even Bryce and Zion parks.

We saw the Goose Necks of the San Juan River, visited the noble plateau of Nokai Dome, stood at the top of Cottonwood Canyon across from historic Hole-in-the-Rock. We climbed over Clay Hill Pass to Gray Mesa, chugged up the Chute-the-Chute in low compound gear,

visited the ruins of Ruin Valley where a forgotten Indian culture once flourished, and wandered among the brilliantly colored spires of Chesler Park. We saw the cliff dwellings of Horse Canyon and Salt Creek, and we watched the sun set behind lovely Angel Arch. There were a dozen other points of interest in the 525-mile *jornada* that Frost led.

His tours are but one of a dozen or more that are available through experienced guides in Utah and northern Arizona. These guides are licensed and franchised. They are experienced men and women who know their areas. Some conduct river float trips, some specialize in short trips from comfortable lodges, others combine river and car and pack trips.

Guided trips are becoming increasingly popular and, surprisingly, they appeal most strongly at the present to folks who are "old hands" at Southwest travel. The desert-

Continued 



Mechanical "Mules"—continued

land fever is in their blood, and they are looking for new corners of the West to poke into before these places become "civilized."

The individual jeep owner who wants to see southeastern Utah's wilderness should think twice before venturing forth into the remote back-country without a guide. This area is vast; its few trails that survive winter snows and summer rainstorms are rugged; in places the way is not evident at all—wavy inclines of slickrock that reveal no tire ruts of vehicles that have gone before. Many parts of this terrain have not been seen by anyone driving a vehicle—an alluring feature for some folks, but no place for one who is not prepared to survive a 60 or 70 mile walk out to civilization should his jeep encounter mechanical failure.

Anyone who has the time and the money can enjoy a guided jeep trip, assuming he's healthy and has a bit of a sense of humor to ease him over some of the ruts in the road. Costs run from \$15 to \$25 a day. This fee includes all food, transportation, guide service and preparation of meals. Some of the guides feature one-day trips. Kent Frost specializes in longer trips, some lasting 10 days.

The longer trips are the ones that get "back beyond." On the first day out of Monticello we sailed almost a hundred miles over paved or graded gravel roads. After that it was 30 to 40 miles a day. Part of each day was taken up with visits to cliff ruins, photo halts, walks to the rim of the canyon of the Colorado or the gorge of the San Juan, and, pleasantly, noontime naps.

On a trip such as ours, there are three or four places where you can get a bath and do the laundry, but they're

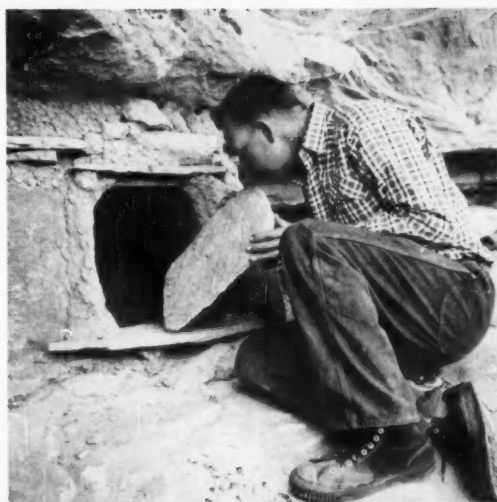


Kent Frost examines an Indian storage bin near ruins in Horse Canyon. Door slab fits the opening so perfectly that a mouse could not have gained access to this granary.

Two back-country explorers walk down historic Mormon-built Dugway on Slick Rock Hill. This rough wagon trail was blasted from the sedimentary sandstone. Trail leads off Gray Mesa.

Pink and White sandstone spires of Chesler Park in the Needles.

There are no roads nor houses in this area.



Seldom-seen Angel Arch, one of the loveliest in the Southwest, was irreverently called "Poodle Dog Arch" by one member of the jeep party. Arch's brown sedimentary rock is streaked with rain marks.



all of the cold water variety. Tour guides provide everything except clothing, toothbrush and camera. They furnish sleeping bags, gasoline, food, utensils, tools and rough gear to pitch a camp and get out of tough spots. The traveler brings his own toilet items, tarp for inclement weather, carrying bags, mosquito repellent (seldom needed) and sunburn lotion.

On our trip there were three women and eight men. The oldest "dude" was 70 (he celebrated his 70th in scenic Squaw Valley!) Kent told me that about half of his passengers are women, and that about half are retired people.

The older folks seem to want to travel over some of this back country before "it's gone and they're gone," Kent explained. "On the other hand, we are getting more and more family groups who want to camp out for a few days."

Two arms of the Glen Canyon reservoir will one day border the area Kent Frost now travels. New and better roads will penetrate the hinterland when it becomes part of the proposed Glen Canyon Recreational area. The beauty of the Needles, the grandeur of Gray Mesa, the colors of Clay Hills, and the historic ruins of Horse Canyon will one day be regular sight-seeing stops for the fast-traveling tourist.

In the meantime, the roads are rough, the dust hangs heavy, the bath water is cold, and the travelers are few.

If you want further information on jeeping trips into the San Juan or Four Corners area of Utah, write to: Chamber of Commerce, Monticello, Utah; Chamber of Commerce, Richfield, Utah; Chamber of Commerce, Moab, Utah; the Utah Tourist and Development Bureau, Salt Lake City, or Desert Magazine Travel Guide, Palm Desert, California.—END

THE GHANAT . . .

. . . ingenious horizontal well of ancient Persia which may hold promise for our water-scarce Southwest Desert

By WILLIAM E. WARNE

Director of the California Department of Agriculture who for several years headed the International Cooperation Administration Program (Point 4) in Iran



⌂ A MOGHANI AND HIS SON LOWER LEATHER BUCKET TO THE DIGGER IN THE TUNNEL 70 FEET BELOW. WINDLASS HAS ITS ORIGIN IN ANTIQUITY.

A TRAVELER FROM our Southwest would see much that is familiar in Iran. In contrast, the ghanats that are older than Persia herself would strike our newcomer as being absolutely new and strange. Nothing like these horizontal wells are found in the deserts of North America.

In the vast arid plateau that stretches from the Elburz Mountains, just south of the Caspian Sea, to the edge of the Persian Gulf, the ghanat supplies water to most lands that are irrigated. It provides the drinking water for man and beast in most of the villages and for many of the towns and cities such as Teheran, Isfahan, Yazd, Shiraz, and Kerman.

The origin of the ghanat is lost in pre-history. Persepolis, the capitol of Xerxes destroyed by Alexander the Great, the Macedonian, rested its splendor on ghanats which watered the gardens and fed the marbled channels and fountains.

Ghanats are an ingenious means of bleeding the water table, and of gently leading a stream through a sloping tunnel down to a point where it can be surfaced. Here the water springs forth as from a natural cavern—limpid, cold and pure, prepared to create and to maintain an oasis in the desert. Most of the outfall cones at the mouths of the innumerable canyons and washes in the mountains that surround the Iranian plateau, support one or more ghanats. If there is but one, a tiny village built of mud is found there. If there are many, a large town. So, the landscape is dotted with villages and towns along the base of

the mountains all around the great dish that is almost as big as Texas and has no river that runs to the sea.

Ghanats of another type, but essentially the same in their construction, are found further down the slopes in the valley areas. Only areas which are geologically blessed with formations that make accumulation of ground water possible will support valley ghanats. Such areas are the Veramin Plain, the Yazd Valley, and the Kerman Valley. Here wonderfully productive fields abound and numerous villages flourish, even great towns and cities exist. In such a valley the vine that inspired Omar grew.

While the origin of the ghanat is lost in antiquity, the highly specialized trade of laying out these unique water systems and digging them is very much alive. The ghanat diggers are called *Moghanis*. Often theirs is a family occupation handed down from father to son through many generations. The diggers have none of the modern engineering equipment that tunnel makers would use in America, but they have great skill and are highly successful with crude instruments. A saturated string is held an end in either hand. A drop of water collecting in the very center will indicate how to run a level. Even with this rude instrument in the dark holes where they work, the *Moghanis* are able to keep appropriate slopes and to avoid disaster. The windlasses used to lift the muck in leather buckets from the tunnels are crude but efficient, and exactly made. The sticks and thongs can be knocked apart and tied in a neat bundle for carrying. I doubt whether any marked technical advance has been made in ghanat digging in a thousand years.

Ghanats are of Persian origin. Only in Afghanistan, next door, are they so widely used as in Iran. They are found, however, in the Arab world from Iraq to Algeria. The Moors apparently took knowledge of them to Spain and the Spanish to South America. A few ghanats are still operating in Chile. Trade routes from Persia ran to China in ancient times, and ghanats are found in the Gobi and other western Chinese deserts.

There are no ghanats in the United States and none have been recorded in North America. Water collection systems like ghanats in principle are used by the City of Los Angeles in subterranean channels under the Los Angeles River. The City of Honolulu and the United States

Navy at Pearl Harbor use a ghanat-like system of tunnels to extract water from the mountain that rises from the dry shore of Oahu Island.

American engineers in the few instances in which they have drilled horizontal wells have used methods similar to common tunnelling. These, of course, can be economic only in instances in which large yield is a foregone conclusion. Some experimentation, still incomplete, has been undertaken with regard to mechanical drilling in Persia. This seems unlikely to replace the age-old ghanat diggers.

Ghanats suffer by comparison with wells equipped with electric pumps in some regards, but have advantages over them in others. The initial cost of a ghanat in Iran today exceeds that of a deep well and pump. But, because a ghanat produces its water through the action of gravity and requires little maintenance, its operation costs are extremely small. To most Iranian farmers the advantage of low operation cost far exceeds any disadvantage in initial outlay. Also, in a land where the transportation system is still inadequate and utilities are unknown in rural areas, an electric or gasoline pump is impractical. The ghanat, therefore, is not apt soon to be replaced by the pumps which have substituted for them in the United States.

The independent irrigation bongah (Iran's Bureau of Reclamation) has reported that mountain ghanats, those well up on the outfall cones, vary from 165 to 8000 feet in length and from 16 to 165 feet in depth of the mother well. They flow from 8 to 800 gallons per minute, with an average of about 80 gallons. Ghanats in the plains are more constant in their flow and less affected by seasonal changes. They may vary from 4900 feet to 12½ miles in length, and the mother well from 49 feet to 495 feet in depth. The flow of the plain ghanat may range from 160 to 2400 gallons per minute, with an average of about 400 gallons per minute. Four outstanding ghanats are:

The Bidokht Ghanat, near the town of Gonabad, has a mother well 1148 feet deep. It flows 2400 gallons per minute and irrigates 370 acres of land.

The Kerman Ghanats are exceptional because of their great length, which extend to 25 miles. Several of these have mother wells as deep as 394 feet, but their flow is not great being about 300 gallons per minute.

The Doulatabad Ghanat, near Yezd, is 31 miles long and has a capacity of 634 gallons per minute. A part of the length of this ghanat actually is in a surface canal. The tunnel was so shallowly bored beneath the surface that a channel was formed.



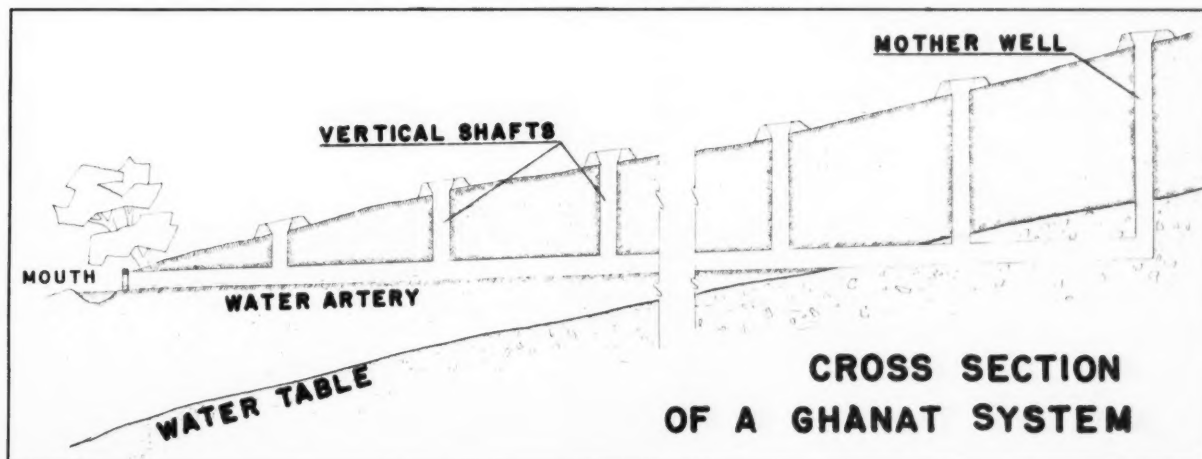
A KILN FOR FIRING CLAY "HORSE COLLARS" USED TO LINE GHANATS

The Shahrood Ghanat is the most productive. Its mother well has a depth of 197 feet, and it produces 3963 gallons per minute. It is the only source of water for the whole town of Shahrood.

A practiced eye will see that our Southwest abounds in places where ghanats could be utilized. The wizardry of modern science and technology has not, in many instances, produced a method to get water in many of these places. A platoon of *Moghanis* would know how to go about it.

Most likely areas in the Southwest which overlay abundant ground water reservoirs of the type that supply the ghanats of the plains of Iran already have been rendered useful by wells and pumping. But, many opportunities like those which support ghanats of the mountain type in Iran are available here.

No nation has contributed more to the technology of water control and irrigation than the United States. Technicians have literally been sent over all the earth to demonstrate these techniques and to plan "modern works." In this field, however, the gadgetry of the scientific age has not rendered obsolete the folk methods of an ancient civilization. A reverse technical assistance program by which Iran would provide the Southwest with ghanat diggers would not be inappropriate.—END



DESERT HOMES

First Impressions Are Important

By
Louise Price Bell

Light-colored bricks of entryway arch contrast with dark bricks of house. Wrought iron lanterns flanking doorway and iron covering glass doors give this home an "Old Mexico" look.



Arizona flagstone steps and walk lead through small entrance-patio to front door of this desert home. Low adobe wall flanking steps holds miniature palms in clay pots.

ressions portant

Oval-shaped entrance,
wrought iron gate,
lend beautiful and
distinctive touch to this
burnt-adobe house.

JUST AS THE eyes are the "windows of the soul," so it is that the home entranceway is an index to what lies beyond. That is why every desert home should have a truly Western look—because that is the look one is pretty likely to find inside, and certainly will find in the outdoor surroundings.

Desert people lean very heavily toward adobe—either natural or burnt—and no material harmonizes better with the Southwest scene.

Desert homes are informal—even the "expensive" ones—mostly because the materials of which they are built exude a casual air. In many cases wrought iron is used in entrances, and is most effective. But, whether rough redwood, wrought iron, used brick or terrazzo goes into a home entrance, the style and "feeling" of this important part of the house should "fit in" with the desert locale and be suggestive of the type of living that goes on inside.

Pecky-cypress
door and
wrought iron
hardware
harmonize with
burnt
adobe. Old
railroad lantern
lights entrance.
Door knocker
at right of
door is made
from bent
branding iron.

VULTURES



--the desert's feathered scavengers

By EDMUND C. JAEGER

DURING THE past year I have traveled 15,000 miles over the great desert areas of North America from middle Mexico to Texas, California and Arizona. In this arid expanse I have noticed that there are two large black birds always present in the skies—the wily sagacious raven and the carrion-eating vulture. Both are able and spectacular fliers, and during daylight hours are almost constantly on the wing in search of food or seemingly just enjoying their magnificent powers of flight. The ravens are mostly found in pairs, the vultures singly or in flocks. The vultures are better and more graceful fliers and are prone to mount much higher, often attaining such great heights that they become mere specks in the sky. In our northern deserts they are more prevalent in summer, but in Mexico one sees them throughout the year.

Many persons have difficulty in distinguishing ravens from vultures. In flight the wings of the vultures are held in a plane above the horizontal; the tips of the wing feathers are noticeably wider apart; the head conspicuously smaller.

To me one of the most extraordinary events of the autumnal months is the gathering together of hundreds upon hundreds of turkey buzzards (*Cathartes aura septentrionalis*) along the Mojave River of Southeastern California in preparation for communal migration east and southward. Where all the somber-feathered creatures come from I can only guess, but it must be from a wide desert area. An even greater mystery is how without opportunity to feed they are able to fly in giant funnel-shaped gyrations for hours and hours on end. Sometimes dozens of these well-integrated flocks beautifully wheel about in the air at one time. It is always interesting to see how some of the birds, acting independently, will leave a flock of their soaring fellows to join and sport-fly with birds of a nearby "flying-funnel."

As night comes on, the gifted aviators assemble, sometimes hundreds of birds together in tree tops, settling there close together with partially-spread drooping wings and indrawn heads. In the morning they begin to consort in flight when the sun is well up and the earth sufficiently heated to cause air currents upon which they can rise and gracefully glide.

At some signal from a leader or in response to some inner-stimulus, the birds of a sudden become restless and begin to move off due-east, later to turn southward to new feeding grounds probably deep in Mexico. When spring comes they come north again and spend several days in the same stately wheeling flocks before dispersing in small groups or pairs to their ancestral nesting and feeding grounds. It is strange that in all the many accounts of the

habits of the turkey vulture I can find no mention of this peculiar avian phenomenon.

I have seen the smaller black-headed vultures (*Coragyps atratus*) only occasionally in southern Arizona and far northern Sonora, but southward in more-humid-cactus-and acacia-covered Sonora and Sinaloa they are common about every village and ranch. The denser human population means a greater number of carcasses of goats, cats, dogs and burros that are abandoned to them. Unlike the red-headed turkey vultures which range much farther to the north (even to southwestern Canada), the black vultures are seldom migratory. At times flocks move about from place to place but the periods are not regular nor is the direction of movement necessarily from north to south. Such territorial changes as occur are probably dependent wholly on the necessity for finding new sources of food.

In their funereal dress of dusty-black feathers, black vultures are only "good looking birds" when in flight. The feather-bare neck and small head are gloomy-black, the skin often wrinkled. Compared to the turkey vulture's tail, the black vulture's is quite short and broad, barely extending beyond the closed wings. The wings too are shorter but little less capable organs of flight. Wingspread of the black vulture is about four and a half feet, compared to the near-six-foot wingspread of the turkey vulture. On the underside of the black vulture's wings, and seen in flight, is a white to silver-gray area which serves as a good mark of identification.

As with other vultures, these birds are scavengers hunting out and eating putrid flesh. Their hooked beaks are well adapted for rending holes in carcasses. The eyes and mouth of the dead animal are first attacked; the flesh is extracted through openings in the skin. The birds finally insert their whole head and neck, and if the carcass is that of a horse, burro or large ruminant, the vultures go right inside the large abdominal cavity. It is amazing how gluttonous these birds can be. At times of easy feeding they may eat until they are so heavy that they can scarcely leave the ground in flight.

No animal is long dead before the vultures congregate about it and begin tearing at its softer parts. Often the ever-hungry village dogs feed alongside the birds. If the dogs are large the birds usually make way before them, demurely waiting near at hand until the canines have finished their foul meal. If the vultures crowd in too soon, the dogs often growl or snap at them. The birds then spring up for a moment, only to gather near again and patiently wait.

Although they are on the whole peaceful complacent creatures and well disposed toward other birds, among

themselves black vultures are not wholly amiable at feeding time. They push and frequently attack one another, "fighting with their claws or heels, striking like a cock with open wings," all the while making sniffing or hissing sounds while the mouth is held wide open. These sounds are akin to those made when a red-hot poker is thrust into cold water. The birds are incapable of making true vocal noises because they do not possess the voice-box or syrinx of singing birds.

Black vultures drink a great deal if water is available, and are even fond of bathing. I once saw a morning gathering of about 500 birds on the flat sandy banks of the Mayo River near Navajoa. At any given time about one-third of the flock was in the shallow water, the birds drenching their feathers or walking out on the sunny shore to spread wide their wings and preen body feathers while drying off. They paid little attention to me and I was able to approach very near.

The one or two eggs, pale-green or cream-colored with spots of brown, are laid upon the ground under bushes or in some cavity of rock or tree. The parents feed the fuzzy-feathered young many times a day. The young are kept gorged with food. While the adult bird stands upright, the nestlings insert their beaks between the opened mandibles of the parent and take the regurgitated food. Young birds have their parents' habit of ejecting the fetid contents of their stomachs upon any creature which disturbs them. Almost two months pass before the young leave the nest; not before three months are they able to fly well.

For a long time it has been debated how vultures so quickly find their food; also how they can so skillfully and

so speedily communicate knowledge of their prize to their fellow birds, often distantly located. When a dead animal is discovered by one of the soaring birds, either by smell or by their extraordinarily keen sight, it floats directly down toward the carcass in such a way that other vultures on similar search quickly make for the spot.

Most writers refer to vultures as repulsive scavenging creatures. Perhaps at close range they are—but when I think of their marvelously skillful flights and the utile part they play as sanitarians, especially in summer in tropical and semi-tropical lands, I am inclined toward tolerance, thinking they deserve a reputation without undue stigma.

There are several accounts of persons keeping young vultures as pets. These people report that vultures have a high degree of intelligence and devotion toward their keepers. These birds are playful and fond of sporting with other household pets such as cats and dogs. Fresh meat is always their favorite food.

The Old World vultures, of which there are many kinds (for instance, seven in the South African deserts and at least five species in the deserts of Egypt and Arabia), along with the hawks all belong to the bird sub-order, "Falcones." Our American vultures, differing so markedly in structure, are placed in the distinct sub-order, "Cathartes." In their mode of living all vultures have much in common.

The American vultures include two of the largest of flying birds, the great Condor of the Andes, with a wingspread of almost 10 feet, and the large California Condor now nearing extinction due to poisoning campaigns against it years ago and the impress of civilization today.—END



TURKEY VULTURE

PANCHO VILLA'S WIDOW

BY W. THETFORD LeVINESS

The "good days" have long since departed, but Dona Luz carries on her fight to restore honor to the name of her controversial husband

IN A DILAPIDATED, almost decadent neighborhood of Chihuahua, on a street lined with low adobe buildings, lives an elderly lady in a stone structure with two stories and some 20 rooms. Chihuahua is the capital of the state of the same name, Mexico's largest. The lady is Dona Luz, widow of Pancho Villa, who terrorized all Mexico when this century was young.

The house she occupies was Villa's military headquarters in Chihuahua. Dona Luz has developed a museum in several of the downstairs rooms and the patio. Faithful to the outlaw's memory for nearly four decades, she meets visitors whenever she is there, and personally escorts them through portions of the home she has arranged for display. With Americans she speaks a good, rapid English; but whether in this language or in her native Spanish, she apparently never tires of relating the daring exploits of her historic and fabled husband.

Villa has been called the "Robin Hood of modern Mexico." Born in the mountains of Durango, he led the poor and oppressed against despotic landowners of the day. He once captured Mexico City and proclaimed himself the nation's dictator; early in 1915, however, he lost power and fled north.

It was in March, 1916, that hoodlums among his followers raided Columbus, New Mexico—the only time since the War of 1812 that a state of the Union suffered armed invasion. There were many casualties, American and Mexican alike.

Whether Villa instigated this raid or even knew about it is in serious doubt. In any case, it resulted in a "punitive expedition" of United States forces into Mexico. The contingent was led by Gen. John J. Pershing.

The Chihuahua action lasted several months. Crude airplanes replenished supply lines on the hot desert chase—the first time in history that flying craft were put to military use. Pershing never caught up with Villa, and public opinion at home was divided. The expedition was



DONA LUZ IN FRONT OF HER CHIHUAHUA HOME

recalled, and Villa became a bandit hero to many excitement-starved Americans.

In Mexico, Villa made peace with the authorities and took up ranching. Conditions failed to improve, and rumors of a comeback persisted. The government is said to have hired assassins; at any rate, Villa was shot to death in an open touring car in 1923. The killing took place in southern Chihuahua state—at Hidalgo del Parral, 200 miles south of Chihuahua city and near the boundary of his native Durango.

He was buried in a crowded cemetery near the scene of the ambush. Soon after, in the dead of night, vandals exhumed the body, decapitated it, and left it to be reburied. The tombstone carries an inscription appropriate to the rank and importance of "General Francisco Villa." The head was never found.

Dona Luz is short, and through the years has put on weight. Her face reflects the struggle waged by most Chihuahua people against sun, wind and dryness. She is not poor, as poverty goes in Mexico; but she has shared the financial fate of many other widows of fallen political leaders. Dona Luz finds it hard to maintain the pride and elegance of her former glory under a government still hostile to the principles of her slain spouse.

"That is why I ask donations," she explains. "Five servants to keep this place clean—it costs too much." A sign, neatly lettered in Spanish and English, says that money given goes principally for upkeep, and that any left over will be used for the permanent memorial she is trying to establish there.

The rooms open to the public are furnished elaborately and are paneled in the European manner so popular in Mexican interiors of the period 1890-1910. Dona Luz shows the overstuffed divan, the old-fashioned gramophone with horn, and the writing desk Villa used when he sent and received his field dispatches. She even shows a few pictures of herself and the famous bandit chief, taken soon after their marriage.

"And here are the weapons," she says with pride. She knows about all of them and how they were acquired. Some are swords and side-arms given Villa by crowned heads of Europe who backed him as a pawn of diplomatic intrigue in the tense days before the 1914-1918 war.

French doors open on the patio, with its flowing fountain and tiled walks. In an abandoned solarium to one side is the car in which Villa was riding when shot. Beside a bullet-riddled door of this old vehicle, Dona Luz speaks calmly of the ambush.

"They used rapid-fire automatics and aimed from a window," she says. "Pancho Villa didn't have a chance."

Villa's widow has traveled thousands of miles in the interest of winning official recognition for the famed outlaw. In Mexico City, she has personally petitioned every president of the republic since her husband's murder for permission to move the headless corpse to Chihuahua. There an impressive mausoleum, built with the meager donations of the poor who loved him, stands unoccupied. Social unrest still pervades Mexico. Each president has refused the plea, fearful that an honored tomb for Villa might somehow become a rallying point for revolution.

The present government is relenting a little. For years no likeness of Villa could be erected anywhere in Mexico. But just recently an equestrian statue of the bandit leader was unveiled in Chihuahua, in a new university suburb and adjacent to the state governor's residence.

In the United States, Dona Luz enjoys solid popularity. Several years ago Hollywood made a film about Pancho

Villa, and she was guest of honor at the premiere. Once she was billed as the stellar attraction at a *fiesta* in Espanola, New Mexico. Occasionally she will take the shot-up death car out of the solarium and send it "on tour." It has been (by truck, since its motor doesn't run and its tires are worn out) to many cities in the United States and Mexico. For a year or so it occupied a portion of a hotel lobby in Ciudad Juarez. Everywhere it is sent, a donation box for the Villa memorial goes with it.

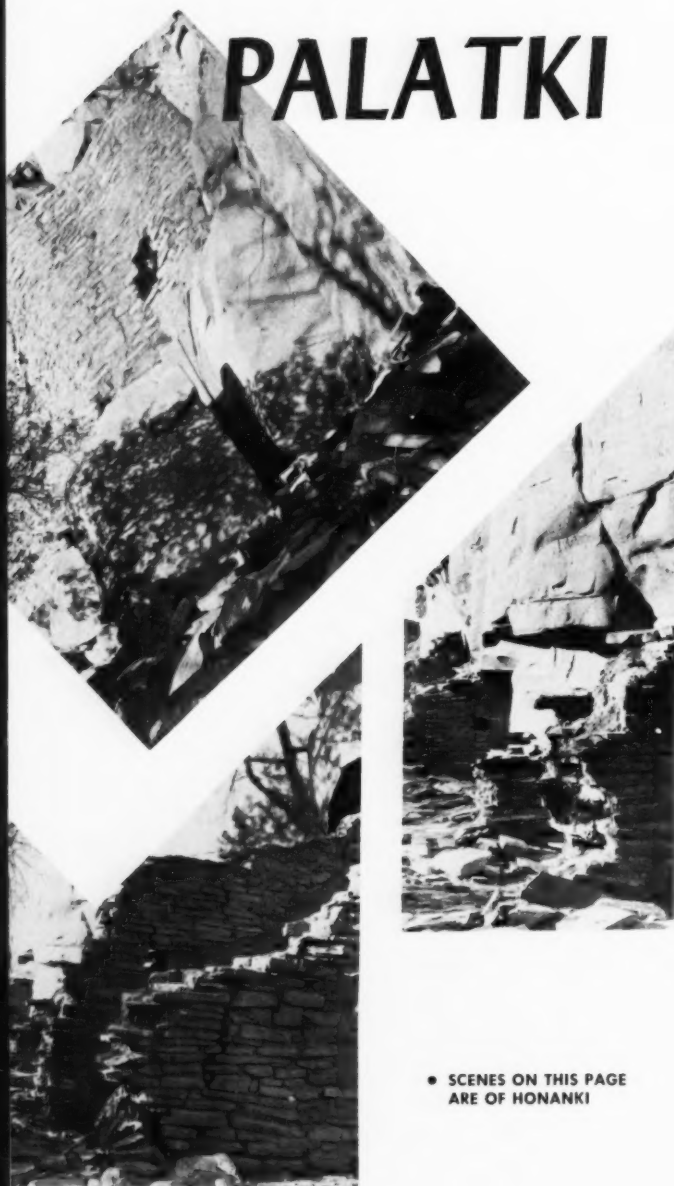
Mexicans in Chihuahua disagree over Villa's reputation. Some regard him as a militant savior; others call him a ruthless killer. Mexico is a land of raw inequalities; even today, those in power must guard against the spark that might set off the powder keg.

It is this continuing atmosphere that has enabled Dona Luz to prosper, in spite of decades of official opposition to her cause.—END



UNOCCUPIED TOMB OF PANCHO VILLA IN CHIHUAHUA

EXPLORING ANCIENT HONANKI PALATKI



• SCENES ON THIS PAGE
ARE OF HONANKI

I LIVE IN A haunted land, a many-canyoned country whose fabulous red and white cliffs are multitudinously haunted by reminders of men and women who dwelt here before us. From my home near Sedona I look out upon a distant hole high up on the face of the north mountain. The "hole," a sizable cave, once held two Indian dwellings snug in its protective embrace. A short distance down the road—if you know where to look—you can find

scores of other remnant human eyries, some tumbled by time into barely recognizable stone heaps, many still more or less intact. Indeed, there is scarcely a rocky nook or cranny of Arizona's upper Verde Valley and its Red Rock country that does not conceal some ledge or cave which now long-gone Indians once called home.

There are fortified hilltops and relic agricultural pueblos, cliff houses and cave dwellings, single family retreats and entire villages. Two, Tuzigoot and Montezuma Castle, are national monuments visited by thousands of tourists each year. These are, of course, well worth seeing; but if you enjoy the taste of discovery, if you like to savor your ruins in solitude and do not mind leaving the pavement, you may want to seek out some of the more sequestered sites. Many, like our cave, require considerable hiking to get to, but some are close to graded roads. Of these, two of the largest are reached via the Red Canyon Road which takes off from Highway 89A 12 miles northeast of Cottonwood, or, if you are coming from the north, 10½ miles southwest of Sedona. Both are on private property, but visitors who observe the normal courtesies of ruin exploration (don't dig, don't deface, don't demolish) are welcome. These ruins, of course, are protected by federal and state laws.

Palatki ("Red House") and Honanki ("Bear House") were so named in 1895 by Jesse Walter Fewkes, the noted archeologist who first described them. Today you need give thought to the access road only in wet weather; but when Fewkes and his party made their way into Red Canyon and beyond, there was no road of any sort, good, bad, or indifferent.

"We were obliged to make our own wagon road, as no vehicle had ever penetrated the rugged canyons visited by us," wrote Fewkes in his report to the Smithsonian Institution. "It was necessary to carry our drinking water from Oak Creek, which fact impeded our progress and limited the time available to our reconnaissance. There was, however, in the pool near the ruins of Honanki enough water for our horses, and, at the time we were there, a limited amount of grass..."

One wonders if the "pool" was the same dramatic rock catchment which today supplies the Joe Hancock Ranch (on which Honanki stands) with water many months out of the year.

Describing the region through which you pass on the way to the two ruins, Fewkes wrote:

"The colors of the rocks are variegated, so that the gorgeous cliffs appear to be banded, rising from 800 to 1000 feet sheer on all sides. These rocks had weathered into fantastic shapes suggestive of cathedrals, Greek temples, and sharp steeples of churches extending like giant needles into the sky. The scenery compares very favorably with that of the Garden of the Gods, and is much more extended. This place, I have no doubt, will sooner or later become popular with the sightseer, and I regard the discovery of these cliffs one of the most interesting of my summer's field work."

His remark about the coming of sightseers to the Red Rock country made him something of a soothsayer. Sixty-five years ago the area was so sparsely settled that Fewkes had great difficulty in finding anyone to help with his digging. Today the Sedona postoffice serves close to 2000 people, many of whom came first as tourists. Yet the nearby countryside around Honanki and Palatki is still almost as deserted as it was when Fewkes named Honanki for a bear which wandered unconcernedly past his campsite. From the highway to Honanki—a distance of 10 miles—you will pass four ranches, but will not see that many houses, and when you get out to walk it will not be too unusual, even now, if you come across sign of bear.

There was a period, perhaps 500 to 800 years ago, when the canyons were far more populated than at present. The Indians who built Honanki, Palatki and the other Verde Valley cliff dwellings, were members of a group archeologists call the Southern Sinagua, those who dwelt in a land of little water; and judging by the extent of the ruins at Honanki and Palatki, several hundred of these people at one time may have lived in these two settlements alone.

Farmers, eventually they were forced out of the valley and its canyons as a result, partially, at least, of a prolonged and disastrous drouth. Much later came the warlike Yavapai, or Mohave Apaches as they are sometimes known, who found the carefully constructed cave and cliff homes of the Sinagua convenient shelters for themselves. The painted pictographs on the cliffs were the handiwork of these more recent inhabitants whose descendants still live on reservations at Middle Verde and Prescott in the Arizona county which bears their name.

When you turn on to the Red Canyon Road, clock the mileage, for these two ruins are well hidden. Six miles from the highway there's a sign: "Red Canyon Ranch, 2 miles; Hancock Ranch, 4 miles." Here the road forks. The right prong leads to Red Canyon Ranch and Palatki at a dead end. If Dolly and Joe Robinson, owners of the attractive well-kept ranch, are at home, they'll gladly show you how to reach the ruins, which are not visible from the white ranch buildings. Leaving your car at the gate, walk toward the cliffs, bear right past a tumbled-down dynamite storage pit, and skirt the edge of a low hill until you come to the trail. A short climb leads to the first of the two Red House ruins.

Perched high on the talus slope, it hugs the face of a majestic rock palisade that protected it from hostile elements and human enemies alike. Once at least 120 feet long and two, possibly three, stories high, the buildings follow the contour of the cliff, and the front walls are rounded in places like bay windows to provide more space in the rooms behind. The people who dressed the building stones and set them in adobe mortar with such originality and effectiveness were evidently skillful workmen.

A few hundred feet to the west is the second ruin, deep in a high-arched cave which overlooks the fields below backed by incredibly grand semi-circular red bluffs. It is not hard to reconstruct in imagination the scene as it must have been centuries ago when industrious Sinagua farmers lived and worked here in comparative security. Call out, and the echo that comes back sounds like a voice out of that distant past.

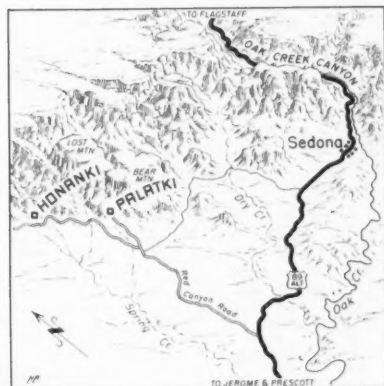
Back in the car, retrace your route to the road fork and take the left-hand prong. From here on, the road is narrower and rougher, but in dry weather entirely passable. It crosses the Hancock Ranch cattleguard, continues past the ranch house driveway. About three-tenths of a mile beyond the driveway, park in a clearing to the right. (If you come to a closed gate across the road, you will have driven a bit too far.)

From the clearing, which is marked with a Hancock sign, an easy foot trail leads to Honanki, though you may have to look a bit sharp to locate it. At its beginning are two small pinyon trees. Sight carefully between them and you'll spot the built walls at the foot of the tremendous cliff.

With binoculars you will be able to look into the numerous small caves high on the sheer face of the rock and discover that this place is also an apartment house for birds. The ravens soaring so nonchalantly above have nests in these sky-reaching niches.

Larger than Palatki, Honanki had a series of rooms

BY ELIZABETH RIGBY




• SCENES ON THIS PAGE ARE OF PALATKI

running along the base of the cliff and a large structure within a great arching cavern which may have served as a fortress in time of danger. The pictographs, particularly interesting here, are believed to be chiefly of Apache origin, but some at least may have been made by the original inhabitants, since they suggest a form still used by the modern Hopis who, archeologists believe, may number the Sinagua among their ancestors.—END

THE HISTORIC HUECOS

The West-Bound
Parade Of History
Passed Through
This Important
Texas Waterhole

By LOUISE AUER



IN THE Hueco Mountains, 30 miles east of El Paso, Texas, and easily accessible, is a happy hunting ground for devotees of Indian and Western lore. Strange indeed are the Hueco (Spanish: "holes") Tanks, covering an area of approximately one square mile—a fantastic stone heap of immense tumbled granite boulders with numerous large and small waterholes gashed into the solid rock by the forces of nature. The tanks, the rich romantic history enveloping them, and the great concentration of hieroglyphics (some of the finest specimens of ancient Indian "writings" in America) have made the place quite famous—and well worth visiting.

As an "oasis" in a long stretch of arid desert, Hueco Tanks have served for centuries as a prominent watering point for travelers passing this way.

Long before the advent of the white man and long after, the Indians made important use of these tanks. Here they established camps, held councils and fought bloody battles. The place abounds in caves, great sheltering cliffs, caverns and canyons once used for habitation and fortifications by the Redman. Pre-historic tribesmen recorded fragments of their way of life with pictographs, and some petroglyphs. These range in age from 2000 to 100 years.

The pictographs are vividly executed in colors—brownish yellow, red, black and white—identified as the work of Pre-Pueblos, Pueblos, Basket-makers, Apaches and Navajos. Among these interesting and symbolic paintings are the "Rabbit Dance," the "Sun

Symbol," a headless woman, and various insects and animals.

Spanish explorers quenched their thirst and watered their mounts at the historic old tanks. The '49ers found the waterholes a welcome rest spot on their arduous trek to the Golconda of the Pacific. And many of these passersby scribbled their names on the rocks, names that are still legible today after more than a century.

Other visitors, swept along in the swirling maelstrom that was the great Westward movement, made the tanks a temporary camping place on the Old Immigrant Trail to California, and they too left names and dates behind them. The Indians used this secluded region as a cache for cattle and goods pilfered from ranches and farms in the El Paso vicinity, and when the Butterfield Overland Mail was placed in operation in 1858, a way station was established at Hueco Tanks.

Waterman L. Ormsby, a correspondent for the *New York Herald*, was the only through passenger on the first Westbound Butterfield stage. Hueco's water supply failed, and Ormsby described the incident with these words:

"On reaching the Waco [Hueco] Tanks we found an excellent corral

and cabin built; but to our consternation the station keeper pointed to two eight gallon kegs, saying, "that is all the water we have left for a dozen men and as many head of cattle." The Waco [Hueco] Tanks have been reported to be inexhaustible, but the unusual drouths had drained them, and the most rigorous search through the mountain did not bring to light any more. The tank had been recently enlarged so as to hold water enough to last a year when the rain next fell, but until that time the station would have to be abandoned unless by chance water could be found in the vicinity . . ."

On a recent visit, I found water in deep cave-like depressions in the rocks—nature-built tanks sheltered by huge overhanging boulders. Southwest of the road is a natural amphitheater in the rock mass where the Indians held their councils. This tiny field was the site of a furious battle between the Redmen and a band of Mexicans. After the initial assault against them, the Indians took refuge in a nearby cavern. They erected a stone stockade, but the Mexicans laid siege and after a few days annihilated the band of 150 Indians.

Hueco Tanks is located on the 15,000-acre Hueco Tanks Ranch owned by J. R. Davis of El Paso. After emerging from the Tank's dim corridors of history, there are many forms of recreation to enjoy at the ranch. The area is a picnicker's paradise, and there are horses for hire, a dance hall for private parties, game room, tables and a canteen.—END

Louise Cheney Auer's "hobby and almost whole interest in life" is Western history. It all started at the age of 10 when she read "The Fall of the Alamo." However, her interest in becoming a writer began even earlier. She was born in East Texas, attended Trinity University, and has lived in La Porte, Texas, for the past 14 years.

BOOKS of the SOUTHWEST

THE STORY OF A VERY HAPPY PEOPLE

The Santa Fe adobe lady, Dorothy Pillsbury, author of *Adobe Doorways* and *No High Adobe*, again turns to her Spanish-American neighbors for the subject-matter of a new book: *Roots in Adobe*.

Short stories make up the separate chapters of this volume. The little tales, complete within themselves, are quaint and fanciful; the book as a whole, entertaining. Author Pillsbury seems not concerned with probing the mysterious (to the Anglo and Indian) subconscious of her charming subjects. What makes Pedro "tick" is not one-tenth as interesting as his often erratic "ticking." Miss Pillsbury glides over the surface with a great deal of skill to achieve her goal: something that is fun to read.

Roots in Adobe is published by the University of New Mexico Press, Albuquerque; illustrated by Sam Smith; 232 pages; \$4.

REVISED WORK DESCRIBES NEW MEXICO'S MINERALS

A revised edition of *Minerals of New Mexico* has been published by the University of New Mexico Press, Albuquerque. Stuart A. Northrop, professor of geology at U.N.M., is the author of this volume. The publishers say the revised edition "contains twice as much information as the first edition which appeared in 1942."

Descriptions and records of occurrence of New Mexico's minerals take up most of

this reference work's 665 pages. Included is a 28x32" two-color map of New Mexico mining districts. \$10.

NINE LOST MINES SUBJECT OF NEW HAROLD WEIGHT BOOK

Don't expect to find a lost mine. That's what Harold O. Weight hints in the foreword of his book *Lost Mines of Old Arizona*. Having warned the reader that lost mines have a tendency to stay lost, Weight

then tells the tales of nine legendary treasure troves in Arizona.

A Norton Allen map and several photos adorn the 76-page booklet. The nine lost mines described are: Bicuner, the Jabonero, the Lost Frenchman, Three Ledges in the Little Horns, Silver of the Trigos, "Richest Mine in the World," The Red Cloud Trail, Nummel's Lost Silver, and Alvarado's Gold. The book is \$2. Published by the Calico Press.

Books reviewed on this page can be purchased by mail from Desert Magazine Book Store, Palm Desert, California. Please add 15c for postage and handling per book. California residents also add 4% sales tax. Write for free book catalog.

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SOUTHWEST NEWS BRIEFS

¶ Arizona's eighth annual bighorn sheep hunt saw 21 bighorns killed by the 62 hunters who participated. Two of the rams were bagged illegally, having horns too small. Six of the animals were killed in Game Unit 16, which includes the Mohave and Hualpai Mountains and Needles Peaks.

¶ The Utah State Park System has added a scenic and two historic sites to its roster in formal ceremonies held at the State Capitol Building. Dead Horse Point mesa, near the confluence of the Colorado and Green rivers, was made a state park. Land area at Dead Horse amounted to 4500 acres. The winter residence of Brigham Young ("Desert," Oct. '59) at St. George and the home of Jacob Hamblin at Santa Clara became state historic sites. A State Parks spokesman said additional land at Dead Horse Point will be added at a later date.



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¶ A bill requiring reservation Indians to vote in off-reservation polling places lurks in the background of a move to acquire for the State of Arizona concurrent civil and criminal jurisdiction on Indian reservations, the "Phoenix Gazette" reports. One northern Arizona senator acknowledged there has been talk of passage of such a bill unless county officials are permitted to police on-reservation polling places. Indian spokesmen say such a move would amount to disenfranchisement of tribesmen who live in the more remote corners of the reservations.

¶ Abandoned in 1878 after a disastrous fire that destroyed its mill and hoisting equipment, the El Dorado South Mine is again in operation. The old silver producer is located in the Belmont, Nevada, mining district. The mine has been flooded to the 150 foot level for the past 82 years.

¶ Frank Takes Gun, head of the Native American Church, said its 200,000 members will continue using peyote in religious ceremonies despite a Circuit Court's ruling that the Navajo Tribal Council was within its rights to forbid the use of peyote on the Navajo Reservation. The use of this cactus herb brings on visions, trances and hallucinations — however, peyote is not listed as a narcotic in the Federal Narcotic Act. Indian members of the Native American Church say peyote has been used as a sacrament in their religion "from time immemorial." Takes Gun plans to take the fight for legal peyote to the Supreme Court.

¶ The Agricultural Research Service has launched a project in eastern Nevada aimed at reducing the area's pond water evaporation. Cetyl alcohol will be used to cut the water losses. This non-toxic chemical spreads a liquid layer one molecule in thickness over the water surface. Water losses by evaporation vary from 40 inches in northern Nevada to 100 inches in the south. The scientists also plan to experiment with a new chemical that reportedly increases snow melt runoff.

Desert Quiz What's your "Desert I.Q."? You'll never know unless you tackle these 20 questions. Included are puzzlers on a wide range of subjects — from Indians to Eisenhower's desert vacation. Thirteen right answers is a passing grade; 14 to 17 is good; 18 or better is excellent. Answers are on page 38.

1. "Bean People" is the name given to the — Navajos . . . Apaches . . . Zunis . . . Papagos . . .
2. The smoke tree's purple blossoms usually appear in—Spring . . . Summer . . . Autumn . . . Winter . . .
3. Lee's Ferry, famed way-station for river explorers, is located on the shores of—Lake Mead . . . Colorado River . . . Pyramid Lake . . . San Juan River . . .
4. Among mine owners, "highgrading" is — Condoned . . . Condemned . . . Ignored . . . Non-existent . . .
5. Montezuma Castle in Arizona is—A prehistoric cliff dwelling . . . Most northern outpost established by the Aztecs . . . Civil War Army post . . . State's first capital . . .
6. The Apache Victorio, a contemporary of Geronimo, is remembered as a — Terrorist . . . Missionary . . . Lawgiver . . . Agriculturist . . .
7. All "pure" sand is composed exclusively of—Finely ground quartz . . . Mica . . . Barite . . . Any kind of rock . . .
8. The roadrunner belongs to the family of—Cuckoo . . . Quail . . . Pelican . . . Wren . . .
9. Pegleg Smith's lost mine is generally believed to be in—Southern Utah . . . Death Valley country . . . White Sands of New Mexico . . . Colorado Desert of California . . .
10. The first wave of U.S. citizens to enter the Southwest did so in quest of — Gold . . . Silver . . . Furs . . . Spices . . .
11. Lieut. Edw. F. Beale brought his camel caravan to the Southwest in —1816 . . . 1827 . . . 1840 . . . 1857 . . .
12. Searching for a *tinaja* on the desert, your need would be for—Water . . . Food . . . Protection against the elements . . . Gasoline for your auto . . .
13. Just before the Civil War, the Butterfield Stage was making the St. Louis to San Francisco run in—90 days . . . 60 days . . . 25 days . . . 11 days . . .
14. Color of typical Hopi pottery is—Black . . . Apricot . . . White . . . Yellow . . .
15. One of the following is a Spanish-American religious sect—Yaqui . . . Luminaria . . . Penitente . . . Metate . . .
16. *Desert Magazine* was founded by Randall Henderson in — 1925 . . . 1937 . . . 1947 . . . 1955 . . .
17. General agreement among prospectors is that a burro laden with 150 pounds can average, in one day—3 miles . . . 8 miles . . . 15 miles . . . 35 miles . . .
18. Rock that contains enough mineral to be mined profitably, is termed—Slag . . . Highgrade . . . Ore . . . Bul-lion . . .
19. Desert horned owls usually make their homes in—Abandoned Buildings . . . Caves . . . Behind water-falls . . . Trees . . .
20. President Eisenhower's recent desert vacation was spent in the California community of — Perris . . . Thermal . . . La Quinta . . . Glamis . . .

By Thomas B. Lesure
6120 N. 18th St., Phoenix

THE GOLDEN gleam of the West has always been one of the biggest lures of the region, and there's hardly a soul alive who doesn't have an active (or secret) ambition to discover some of the precious metal himself. Many desert dwellers and vacationists, though, aren't confirmed rockhounds, and so they shy away from actual prospecting. However, all need not be lost in this respect since there's an easy way to get some gold—as thousands of tourists learn each year.

The solution is the annual Wickenburg Gold Rush Days, slated this year for February 12-14.

The gold is guaranteed to be there. Guaranteed, that is, unless somebody does a little unexpected salting with brass—as happened one year! Of course, you still have to work to get it but that's half the fun. And you can keep every single nugget and grain of gold dust you find.

One of the principal features of Gold Rush Days is panning for gold in the Haysayampa River—that storied stream whose waters supposedly make anyone who drinks them a liar ever after. Since most of the

famous lodes like the Vulture Mine have long since played out, members of the Round-Up Club (Wickenburg chamber of commerce) truck in gold-bearing gravel from other sites. It's strewn along the usually dry river bed, and water is "piped in" for washing out the gravel. Some folks, however, bring their own water, and if they haven't real gold pans, substitute frying pans.

Panning usually gets underway in the late afternoon or early evening of the festival's first day and continues over the week end. And while in theory the early birds have the best chances of recovering the mineral, gold is still where you find it. Hence, lucky "prospectors" may pan out the best specimens at the last moment.

The gold panning draws most of the visitors, but it's only one activity of the week end. The early mining era of this "dude ranch capital of the world" is recaptured in the western parade and such events as jack-drilling or mucking contests. Local cowhands stage a rough tough rodeo. And for evening fun—among other special doings—there is the big Bonanza Ball.

Wickenburg Gold Rush Days is a slice of the Old West—made more picturesque by the town's porch-fronted structures and hitching rails. It's essential, however, if you want to stay at one of the local dude ranches or motels, to make reservations well in advance. Or you could stay in Phoenix, about an hour's drive southeastward.

While the week end's occurrences can easily keep one occupied, it's a good bet to include regional exploring, too. By contacting the Round-Up Club and making special arrangements, you probably can inspect the remains of the old Vulture Mine west of town. Almost due east lies Castle



A MODERN-DAY "PROSPECTOR" TRIES HIS LUCK

Hot Springs, a mountain-rimmed oasis with mineral waters and opportunities for rock-hunting (*Desert*, Nov. '59).

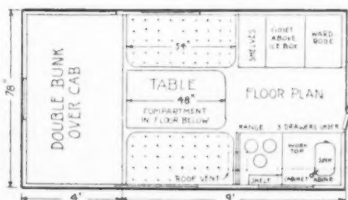
Heading up U.S. 89, you may strike off on State 71 and 93 into fairly widespread stands of Joshua Trees that look out on rugged desert-mountain terrain. Or near Congress, drive in the other direction (over rough roads passable in a family car) to the ghost towns of Stanton, Octave and Weaver.—END

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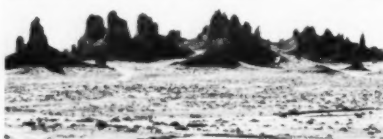
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By Lucile Weight
P.O. Drawer 758, Twentynine Palms, Calif.

ONE OF THE desert's most curious and spectacular landmarks, now that it is in danger of destruction, may be visited by far more people than had ever heard of it before. This is the Pinnacles area on the southwest shore of ancient Searles Lake in San Bernardino County, on a short side road off the Trona highway which links Hwy. 395 with Death Valley via Wild Rose Canyon. Scores of columns of porous bleached limestone, 50 to 100 feet high, rise along lines running at various angles. They extend over a north-south distance of about 4.8 miles between 1800-1900 feet elevation.

The main group is reached by turning off the Trona road 5.7 miles east of Salt Wells Station. There is a double-right branch here; take the left—which signposts warn is not maintained and is not advisable. Careful drivers should have no trouble, but do not attempt to drive beyond the main Pinnacles group without a jeep. The dirt road very soon crosses the railroad, then angles south to parallel it. Disregarding three or four left branches, at 4.6 miles



THE PINNACLES NEAR SEARLES LAKE

take the left branch which leads into the Pinnacles area.

When it was discovered that a company held mining claims to 400 acres here, county officials and others pondered how they could save the Pinnacles and make them part of a park or reserve. Although the U.S. Bureau of Land Management, Los Angeles office, said the claims were valid, the county moved to contest this. In December, 1959, the situation was at a standstill.

Scientists say the Pinnacles were caused by precipitation of calcium carbonate when this great basin was a lake. But what forced the precipitation? Under what circumstances? And when?

The latter question can be answered in general terms. It must have happened during Pleistocene times, not long ago geologically. Water may have filled the lake from 16,000 to 4000 years ago. The water was over 600 feet deep for it had to rise to 2262 feet to round the south tip of the Slate range to drain north into Panamint Valley, and as some believe, into Death Valley by Wingate Pass.

Source of this mass of water was over 150 miles northwest, where the ice age was making a last stand. The warming sun was melting the great flows in the high Sierra Nevada; ancient Owens River spread into a lake. It broke through at Little Lake, then flowed southeast over present Indian Wells Valley. It next broke through little Salt Wells Valley into Searles.

In this Pleistocene lake the Pinnacles

were created. Some explain the forms by saying that algae were the means of causing the limey material to precipitate from the water. This could have caused mounds and reefs—but does it account for the great isolated columns? Others believe that springs caused the Pinnacles to build up. In this case the water coming to the surface, starting to evaporate and cool, would "lose its balance" as the carbon dioxide escaped, thus precipitating the calcium carbonate which gradually built up around the spring openings. Whether springs could cause such high accumulations is open to question. Perhaps someone will find another explanation when the earth faults in that area are studied further.

But if the Pinnacles are dynamited and bulldozed and hauled away to chemical vats, the story will never be deciphered—and a desert marvel will have vanished more completely than Pleistocene Lake Searles.

Two California desert-country events of special interest are scheduled for February: The Riverside County Fair and National Date Festival at Indio, Feb. 12-22; the 13th Annual Carrot Carnival at Holtville, Feb. 4-7.—END

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● MINING

ASSAYS. COMPLETE, accurate, guaranteed. High-est quality spectrographic. Only \$8 per sam-ple. Reed Engineering, 620-R So. Inglewood Ave., Inglewood, California.

\$1 FOR gold areas, 25 California counties. Geology, elevations. Pans \$2.75, \$2.25. Poke \$1. Fred Mark, Box 801, Ojai, California.

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20 ACRES, choice property, scenic view, near subdivisions, \$800 per acre, Box 26, Morongo Valley, California.

ANSWERS TO DESERT QUIZ

Questions are on page 32

1. Papagos.
2. Summer.
3. Colorado River.
4. Condemned—highgrading is the term for stealing rich ore.
5. Cliff dwellings.
6. Victorio terrorized inhabitants of Arizona, New Mexico and Chihuahua before he was killed in 1880.
7. Any kind of rock.
8. Cuckoo.
9. Colorado Desert.
10. Furs—the Mountain Men blazed the Westward trails.
11. 1857.
12. Water. A *tinaja* is a natural rock basin, usually containing standing water.
13. 25 days.
14. Apricot.
15. Penitentes.
16. 1937.
17. 15 miles.
18. Ore.
19. Trees and tree-like plants such as the yucca.
20. La Quinta.

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PHOTO HINTS



Campfire Pictures

By BOB RIDDELL

Have you ever taken the family for a campfire cookout supper on the desert, and after dark wanted to catch them at their outdoor best with your camera? Well, here's how to do it:

Your camera must have an open shutter mechanism and flashgun attachment. A tripod or some solid object is a must to keep the camera steady.

The flashbulb picture is the easiest. Use the guide number on the bulb package for the number of feet the subjects are from the camera; or if you have a preset camera follow the instructions that come with it.

The open shutter method allows exposure for the fire, then while the shutter is open fire a bulb high and to the right of the camera to fill in faces; then close the shutter. Try 4 seconds at F 16, fire the flash at count of 4 and close the shutter.

Composition is important. Use a Saguaro cactus for background; or mountains if taken at dusk. Pose the family so the scene looks candid and realistic. Have Suzie sitting on a waterjug to the left, cooking a hotdog on a stick; Johnny can stand next to mom who is leaning toward the fire. Make sure picnic "props" are in the picture, and keep your subjects about 10 feet from camera.

Many of us still use the slow color films which take longer exposures with open shutter method. Put subjects in color: reds, blues, greens and in Western attire for atmosphere. Bracket exposures for color and even for black and white, as pros do; and if you use the new fast color films, experiment with a roll to see which combination is best.

The photo accompanying this article was taken with a 4x5 speed graphic camera; 5 1/2-inch f11 lens; Super XX film. Exposure: 4 seconds at f. 16 to expose for fire, No. 25 bulb fired high to right of camera while shutter was open. Camera to subject distance: 12 feet. Photo was taken on the desert near Tucson.—END

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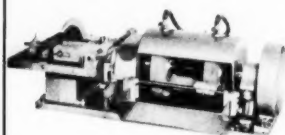


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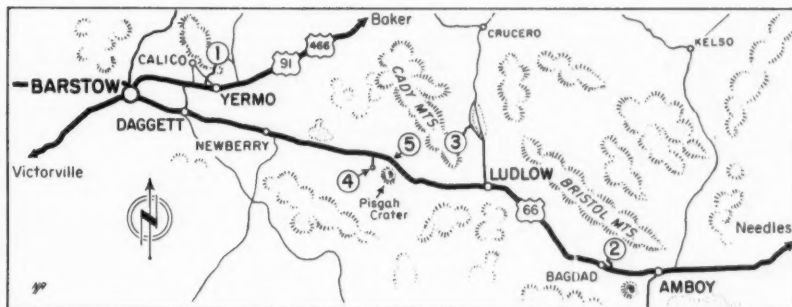
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Five Gem and Mineral Field Trips in the Barstow Area

By CHARLES SILVERNAIL

In the "early days of rockhound-
ing"—a decade ago—Desert Maga-
zine's field trip stories and Norton
Allen maps led countless hobbyists
into new gem-mineral fields. After
10 seasons of "overgrazing," many

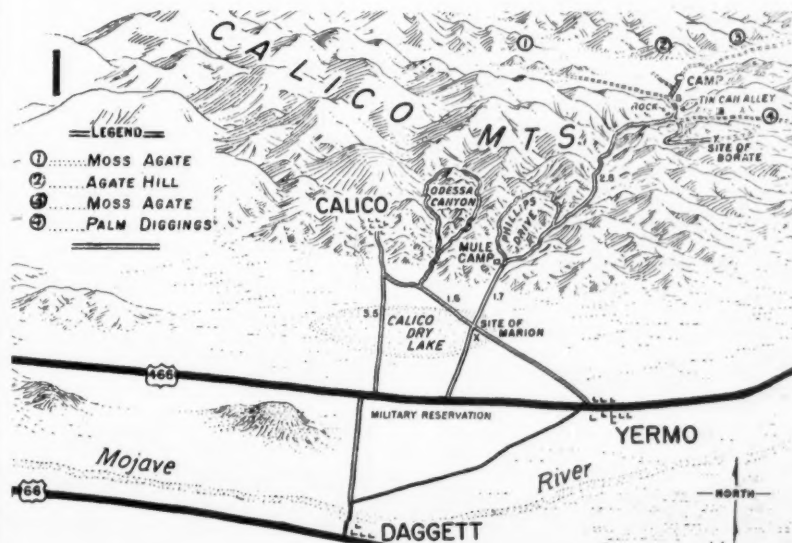
of these fields are depleted—some
will never be. Here is a current re-
port on five of these gem fields on
the Mojave Desert—four of which
are still productive and well worth
your visit.

(1) **CALICO MOUNTAINS** — These
colorful hills were one of the first Mo-
jave Desert collecting areas to become
popular with rockhounds, and today
they yield just as much material as
ever, though you will have to work
harder for it now.

Plan to spend no less than a week
end on this trip, first described by
Harold O. Weight in *Desert's* January,
1948, issue. In addition to your rock
hunting you will want to see Calico,

Odessa Canyon, Phillips Drive and
other scenic places. The area has sev-
eral good campsites where you may
take a trailer. No firewood or water.
Supplies may be obtained at Yermo.

From Barstow follow Highway 91
east 11.4 miles, to just past the Marine
Corps installation. Turn north on a
graded road which makes a complete
loop through Mule Canyon, returning
to Highway 91 a couple of miles east
of Yermo. A trailer may be pulled





2

through the canyon — or you may leave the trailer at one of the campsites while you prospect.

You can have an hour's profitable fun digging in the old Marion town-site smelter dumps. You will be amazed at the beauty of some of the pieces of slag you will find (and you can cut the stuff). Don't neglect the smaller pieces. Fine bits of costume jewelry can be made by cleaning and applying fingernail polish to these specimens.

Two miles farther up the road is Cathedral Rock (the old mule camp of Borate days)—an excellent campsite. The road makes a "Y" at this point—take the right fork through the canyon. A little over two miles up the canyon a poor road leads to the dumps of the old borate mines on the hillside. These dumps still yield crystals of colemanite and selenite.

A short distance farther on is Tin Can Alley—a famous rockhound locale with an infamous name. At Agate Hill agate with some sagenite can be dug up—but it takes a lot of hard work. Today, the best material is found in the west-end of the valley. These specimens are in veins running along the ridge that forms the valley's west wall, and in the hill directly north. Again much hard climbing and digging is necessary to get out the moss agate, sagenite and blue agate that "grows" here.

A mile east of Tin Can Alley is the "old palm diggings." This area is pretty well depleted, but an occasional nice piece of palm root comes from

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here. The main palm wood diggings today are a mile east of the old location. Here a road leads south around a fenced area guarding an old mine shaft. The palm is mixed with chert and it takes hard digging to remove it, but it's there.

(2) BAGDAD OBSIDIAN — "Gray Jewels of Bagdad," Harold Weight called these beautiful little obsidianites when he first reported their presence near Bagdad in the November, 1949, issue of *Desert*. And gray jewels they are—and smoky and black, too. After years of being picked over by rockhounds there appears to be just as many of the nodules today as ever, though the best collecting area now seems to be closer to the lava hills than indicated by Weight.

On the day I visited this field it was pretty rough going the last couple of miles, as a recent flash flood had wiped out all evidence of any trails or road up the bajada. By now, however, new trails probably have been made—but those last miles are best covered by jeep or afoot.

To reach the area, travel a half-mile east on 66 from Bagdad. A fair desert road angles off north across the railroad. Just past the tracks the road forks. Take the left branch to the poleline and gas-pipe line. Here turn sharp left and follow this trail for .6 of a mile. Turn right under the pole line. A few yards north will bring you to the faint trace of the old mine road running northeast. A jeep can negotiate this road for a mile or so, but if you are in a standard car, look for signs of trail leading north toward the lava hills. A good driver, avoiding the soft washes and bigger boulders, can make it up the bajada. The hills to the north and west hold some nice opalite.

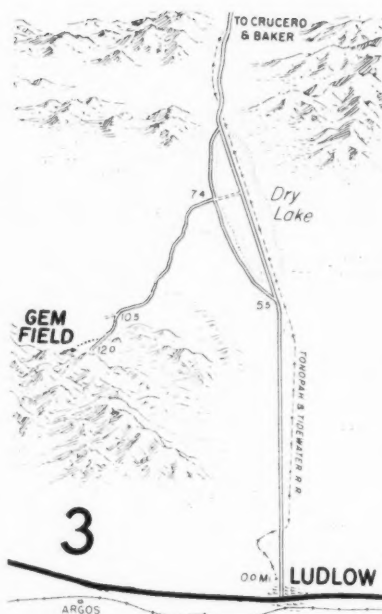
(3) SOUTHERN CADY MOUNTAINS—

"OVERLOOKED FORTUNES"

IN THE RARER MINERALS

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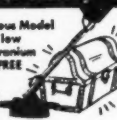


3

This area has long been a favorite with rockhounds. Today, just as much material (perhaps more) is being found as when Harold Weight first told *Desert* readers about the Southern Cadys in December, 1948. Agate of all kinds—fortification, moss, jasp-agate, chalcedony in all grades from excellent to bad, quartz crystals; celestite and flu-

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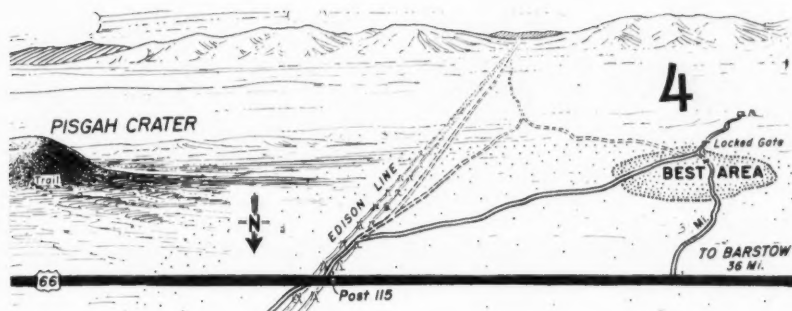
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orescent calcite — is found here in abundance.

Leaving Highway 66 at Ludlow, go north on the Crucero Road to the edge of the dry lake bed. Follow the west side of the lake to where a coffee can nailed to a stake indicates the turnoff to the left leading to the collecting area.

Trailers can be taken to this turn-off (and it's a good campsite), but

from here on for about five miles the trail is winding and rough in places, although any standard car can make it. The trail is easy to follow.

The road branch at the 10.5 mile mark is no longer visible. Another coffee can marks the road branch at 11.8 miles, but it is advisable to leave your car at this point and do your prospecting on foot. The whole area for several miles is excellent rock country.

(4) PISGAH JASPER—This easy-to-reach area, described in the January, 1946, *Desert* by John Hilton in a story titled "Jasper Enough for Everybody" appears today very much the same as it did 14 years ago. One would think that rockhounds had never heard of the place—but they have.

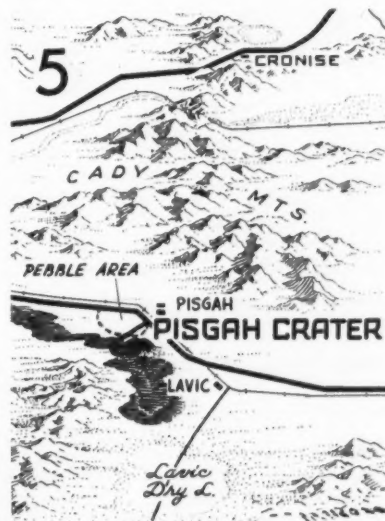
Leaving Highway 66 a few feet east of milepost 114, a good desert road leads south right to the collecting field. The best collecting is done on the low hills to the east and west of the road a short distance south of the new gas-pipe line. Jasper, in all its beautiful desert colors, some agate and chalcedony can be picked up as float. The only advice to be given here is to "high-grade" the stuff. There is still "jasper enough for everybody."

(5) TUMBLED GEMS AT PISGAH—

This area, described by Harold Weight for *Desert* readers in the November, 1954, issue, is not recommended as the object of a field trip today. Nature has not been able to turn out polished stones as fast as the rockhounds have picked them up. An hour's search may or may not produce a few stones. The area described by Weight is directly opposite Pisgah Crater right along Highway 66. The road into the area mentioned in the 1954 article, is not found today, so you will have to park along the highway and walk into the field.

Another area producing the same type of material—and in just about the same amounts—is a few miles west on the highway, at milepost 110 where the lava appears to be flowing across the road. Here small pieces of the lava have become semi-polished. These bits of rock make novel pieces of jewelry when coated with nailpolish.

—END
Note: Maps accompanying this article appeared with the original *Desert* Magazine field trip reports on these areas. Road conditions have changed in some cases. Consult text—and always make local inquiry before driving the desert back roads.



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By RANDALL HENDERSON

THE RAIN GODS have been generous to the desert region this winter. We have had many hours of that gentle rainfall which penetrates deep into the sand. The response of the desert to such moisture at this season is miraculous. As the water seeps into the good earth it becomes the catalyst of a new life cycle for millions of tiny seeds which have remained dormant for months, perhaps for years.

Within a few weeks the arid landscape will be carpeted with green—the sprouts of flowers, grasses and shrubs which have long awaited the coming of water to provide the hydrogen and oxygen necessary for them to fulfill their cyclical destiny—to germinate, to grow and flower and produce the seeds necessary for the perpetuation of their species.

The California State Park rangers tell me that the first crinkly leaves of the lovely desert lily are showing above the ground in the Borrego Valley. Since the lily bulbs lie dormant 12 or more inches below the surface it is only in years of extra rainfall that they send up their flowering stalks.

Barring the possibility of hot winds during the early months of the New Year, the forecast is for a colorful wildflower display in February, March and April, according to elevation and temperatures. We folks whose homes are on the desert are pleased when visitors come to share the beauty of our flower strewn landscape. Our only request: Please enjoy but do not destroy. The blossoms would wilt before you could get them home anyway.

Long-time readers of *Desert Magazine* are well aware that this editorial page has always been an out-spoken advocate of vigorous outdoor recreation—hiking, camping, mountain-climbing and exploring. I share the disdain of active outdoor people for ease and softness.

If any reader is curious to know how I got that way I will quote a passage from a book published 26 years ago, which has had a very important bearing on the philosophy of life I have developed in later years. In Dr. Alexis Carrel's *Man the Unknown* published by Harper & Brothers in 1935, the author wrote a revealing chapter on certain functions of the human body which are seldom mentioned in the schools or the home. I refer to the adaptive functions. Dr. Carrel wrote:

"Man attains his highest development when he is exposed to the rigors of the seasons, when he sometimes goes without sleep and sometimes sleeps for long hours, when his meals are sometimes abundant and sometimes scanty, when he conquers food and shelter at the price of strenuous efforts. He has also to train his muscles, to tire himself and rest, to fight, suffer, and be happy, to love and to hate. His will needs alternately to strain and relax. He must strive against his fellow men or against himself. He is made for such existence, just as the stomach is made for digesting food. When his adaptive

functions work most intensely, he develops his virility to the fullest extent. It is a primary datum of observation that hardships make for nervous resistance and health. We know how strong physically and morally are those who, since childhood, have been submitted to intelligent discipline, who have endured some privations, and adapted themselves to adverse conditions."

I am sure that if all parents, and those who have the responsibility for the training and disciplining of children would learn and live that important lesson there would be much less juvenile delinquency in the land. In my dictionary, personal ease and boredom are synonymous terms, and I suspect that more than half the human follies of this period, from fixed television shows to youth revolt are directly or indirectly the product of boredom.

Civic groups in Utah have proposed that the new lake to be formed by the construction of Glen Canyon Dam in the Colorado River be named in honor of Major John Wesley Powell, leader of the first boat expedition to navigate the Grand Canyon of the Colorado. Some time ago Charles Kelly, Utah historian, suggested that the lake be named for Father Escalante, the Spanish padre who left an interesting record of his trek through that region in 1775 in a vain effort to find a new short-cut route from Santa Fe to the Pacific. Either of these courageous explorers is worthy of the honor of having the new lake bear his name.

But whether it is Lake Powell or Lake Escalante, I am sure it is destined to become one of the most popular recreational areas in the West. For the great new reservoir will penetrate 140 miles into the most colorful country in the United States. It is a far more scenic area than the Lake Mead shoreline. Under the protection and management of the National Park Service, I am sure that in the years ahead campers, fishermen, outboard motorists and photographers will find this lake and its fantastic shoreline a vacation paradise.

According to a Phoenix newspaper, the Arizona State Parks Board is planning to restore the old Tubac Presidio in the southern part of the state and preserve it as a historical shrine. This is a project in which Californians also have an interest—for it was at Tubac that the first band of white settlers was organized to colonize California.

On October 23, 1775, under the leadership of the gallant Juan Bautista de Anza, a caravan of 240 men and women with 695 horses and mules and 355 cattle began the long overland trek to the Pacific. Five months later they reached the site of what is now San Francisco and there began the colonization of California. Father Serra already had established a chain of missions along or near the coast—but it was the Anza expedition which really started the westward trek of settlers to the Golden Bear State.

DESERT RAT HARRY OLIVER'S

ALMANAC

1888 • 1999



THE WEST IN LINCOLN'S DAY

This edition of this "Almanac" is just as it might have been printed a little over a hundred years ago in Dodge City, Kansas—Santa Fe, New Mexico—Virginia City, Nevada—or Sonora, California—that is if there was an editor thereabouts as illiterate as I.—H.O.

The Philosopher

Certainly no other President has been so widely quoted. My favorite happens to be one of his written stories—one of his least known:

A tanner, who bought hides and sold leather, needed a sign to proclaim the nature of his business. A calf's tail, he thought, would make a striking emblem, hanging outside his door. To hold it there, he drilled a small hole in the door.

One morning the tanner looked up to see a dignified stranger staring at the tail in deepest thought. The stranger didn't budge for half an hour. The tanner couldn't stand the suspense. He went out.

"Good morning," he said. "Do you want to buy hides?"

In frowning contemplation, the stranger said, "No."

"Do you want to sell hides?"

Again the stranger said "No," and he said it a little irritably, as a man who wants to be left alone with important thoughts.

"Are you a merchant?" the tanner asked. "A lawyer? A doctor? Then who are you?"

"I am a philosopher, sir," said the stranger, "and though I have been standing here half an hour, I still can't make it out. How did that calf get through that hole?"



Many of Lincoln's short quotes have found their way into our common talk—such as—

It is no time to swap horses when you are crossing the stream.

The best way to get a bad law repealed is to enforce it strictly.

I don't think much of a man who is not wiser today than he was yesterday.

WITH THE coming of the telegraph in 1862, Abe Lincoln did for sure become a part of the West. The "singing wire" was meant for Lincoln, who always spoke in Morse Code style—brief and concise. His succinct summary of the news, his quick humorous anecdotes and to-the-point observations of the world around him were the delight of the little hand-printed newspapers of the small desert country boom-towns.

These little newspapers carried his yarns back into the hills—yarns that maybe were "salted" a little by the Western editors who leaned a little to exaggerating things.

As I search the research from down San Diego way I come up with the little-known story about Lincoln and San Juan Capistrano Mission. Seems Abe took the mission property from the land barons and gave it back to the Church. The Indians were very happy and the Alcalde told his people the story of Lincoln, and he told it well—the log cabin, the rail-splitter, the great president...

The Alcalde told the story of Lincoln so well, in fact, that a little pregnant Indian girl came up and begged him to help her find a log cabin so her baby—if it be a boy—could be a great president, too.

The newspaper men in the brawling mining camps were happy with the story of the fanatic temperance advocate who called on Lincoln to protest against the whiskey drinking of General Grant. After listening to the good man's harangue, Lincoln said, "Find out the brand of whiskey Grant uses. I would like to furnish the same brand to my other generals."

"The Union," a Grass Valley, California newspaper, ran a story a short time later reporting that 30 days after the above anecdote came off the wire there were 19 distillers between Grass Valley and Reno putting out a brand of "General Grant Fighting Whiskey."

It has ever been my experience that folks who have no vices have very few virtues. —Abe Lincoln

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